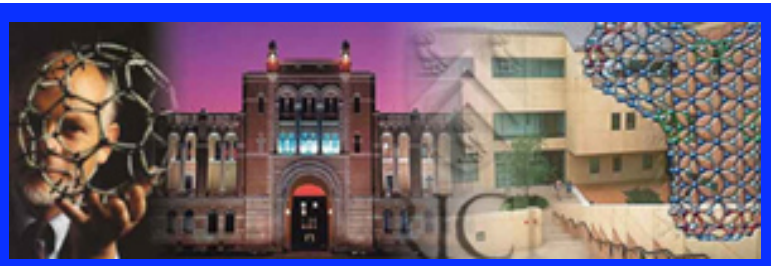
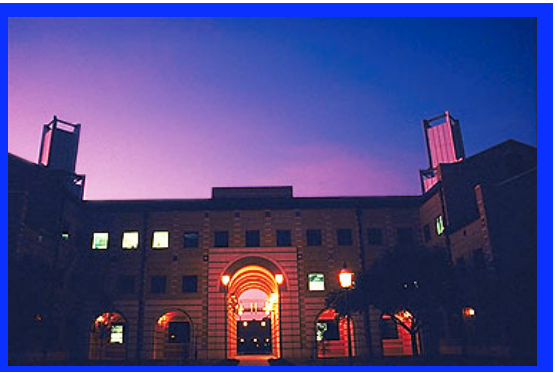





RICE
UNIVERSITY

" A Scientist's Approach to Diplomacy – First, Listen and Learn"

Neal Lane, Rice University

APS Anaheim
May 3, 2011

"Physics is perhaps the most international of all human endeavors. Physicists naturally think internationally, and their closest research collaborators are as likely to be across the world as across the hall…APS meetings often look like mini - U. N. sessions, and APS journals are populated with papers with authors (and co-authors) from all continents."

J. Thomas Ratchford, FIP Chair, from *FIP Newsletter*, 1996.

ICPEAC -International Conference on the Physics of Electronic and Atomic Collisions

New York 1958
Boulder 1961
London 1963
Quebec City 1965
Leningrad 1967
Boston 1969
Amsterdam 1971
Beograd 1973
Seattle 1975
Paris 1977
Kyoto 1979
Gatlinburg 1981
W. Berlin 1983
Palo Alto 1985
Brighton 1987
New York 1989

Brisbane 1991
Arhus 1993
Whistler (Canada) 1995
Vienna 1997
Sendai 1999
Santa Fe 2001
Stockholm 2003
Rosaria (Argentina) 2005
Freiburg 2007
Kalamazoo 2009
Belfast 2011

"This continuing series of biennial international conferences promotes the growth and exchange of scientific information on photonic, electronic and atomic collisions and such related areas of atomic and molecular physics that the governing bodies of the conference shall from time to time select." (ICPEAC charter)

XXI International Conference on the Physics of Electronic and Atomic Collisions

Sendai, Miyagi Prefecture,Japan
July 22-27, 1999

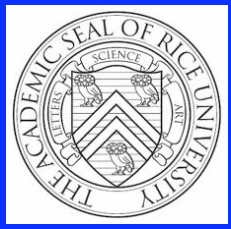
Sandai, Japan
March 11, 2011,
Earthquake and Tsunami

sikkimonline.info

weathersnob.com

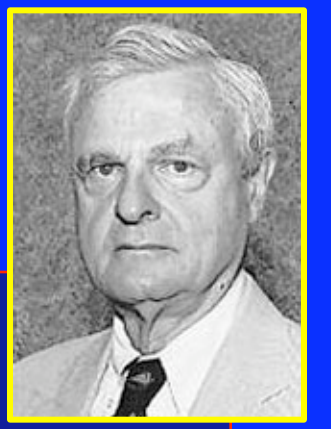
OUTLINE

- Two Angles on "Science Diplomacy"
- Experiences at NSF & OSTP
- Lessons Learned and Looking Ahead



Two Angles on Science Policy

Harvey Brooks, Harvard (1915-2004)



whoi.edu

Policy for Science

e.g. research funding & regulation;
visa and export control policies;
international agreements on facilities

Science for Policy

e.g. applications to security, health and safety,
environmental protection, energy,
transportation, and many others

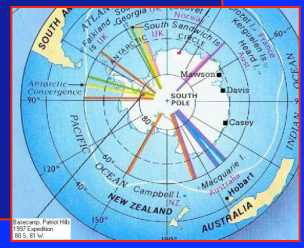
Two Angles on Science Diplomacy

Diplomacy for Science

e.g. research collaboration, international conferences, shared facilities..

Science for Diplomacy

e.g. use of scientific research to improve relations between nations; help solve world problems; protect the earth's environment and biodiversity….



OUTLINE

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NSF's International Activities

NSF funds international research and education activities that primarily benefit the U.S.

- Investigators' foreign travel, etc.
- Shared international facilities
- U.S. Antarctic Program
- Research and education grants (e.g. PIRE)
- Offices in Paris, Tokyo and Beijing
- Advice to nations establishing NSF-like organizations
- Joint activities with US AID

NSF's International Activities

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NSF and other agencies could do much more, but Congress has not been encouraging – to some of them it sounds like "foreign aid".

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- Offices in Paris, Tokyo and Beijing
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OSTP's International Activities

The President's Science Advisor (w/OSTP) has three jobs

- Advise the President on International S&T Matters.
- Coordinate Agency International Activities
- Report to Congress on Standing of U.S. S&T in the world

That includes S&T agreements with many nations – exchanges, joint research, shared facilities, etc

- China, Europe (CERN), India, Japan, Russia, S. Africa,, etc.
- OECD, UNESCO, APEC, CRDF,…, intl. conferences, etc.
- Carnegie (G-8) Group (started by Allan Bromley)

U.S.- China Agreement on Cooperation in Science and Technology

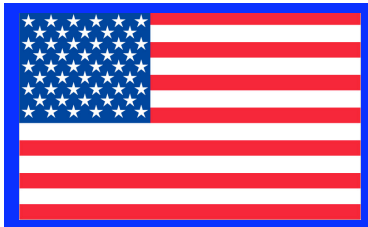
- U.S. China "S&T Agreement" signed in 1979 by President Carter and Premier Deng Xiaoping
- Umbrella agreement renewed in 2006 by Presidents Hu and G.W. Bush
- Approximately 20 U.S. federal agencies have cooperative R&D programs under Protocols and MOU's.
- Fields include: agriculture, geology, earth and atmospheric sciences, health, physics, chemistry, fisheries, disaster research, industrial technology, energy R&D, and others.
- China-U.S. Joint Commission on S&T (Minister-level meetings)*
- U.S.-China Forum on S&T Policy (non-government forum)* (sponsored by NSF and National Natural Science Foundation NSFC)

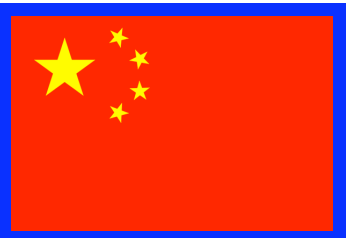
* Commission and Forum met in Beijing in October 2006

U.S.–China Forum on S&T Policy

(Issues discussed at Oct. 2006 meeting in Beijing)

- Impact of new technologies: IT, nanotechnology, bioengineering
- Conflict between cooperation and leadership, e.g. in discovery and innovation
- Public Understanding of S&T – new role for scientists
- Global problems – energy, environment, water, health, terrorism, etc.
- Universities' critical role – openness, freedom, core intellectual values
- Differences between U.S. and China, which can affect cooperation:
  - Lack of parity
  - Differing constituencies
  - Funding classifications and patterns
  - Approaches to cooperation
  - Political leaders' opinions on the importance of science and research
- Barriers to Cooperation – Intellectual Property Rights (IPR); visas; export controls; political and economic tensions,
- U.S. and China may need a new model of cooperation in the future ?





Remarks prepared for presentation at the 2006 U.S.-China S&T Forum*

" I will conclude my remarks by expressing the view that this is a time of unprecedented opportunity for cooperative research between the U.S. and China in a broad range of research areas. That fact, coupled with the large number of gifted Chinese science and engineering researchers, many of whom have studied in America and either remained there or returned to China, suggests that the time is right to launch a new era in U.S. – China cooperation in science and technology."

*Neal Lane's presentation at the U.S. – China Forum on Science and Technology (S&T) Policy, October 16-17, 2006. Beijing, China

Neal discussed nanotechnology with President Jiang Zemin in 2001.

NATIONAL ENGLISH-LANGUAGE NEWSPAPER 中国日报 FOUNDED IN BEIJING ON JUNE 1, 1981

CHINA DAILY

Vol. 21, No. 6759 TUESDAY, NOVEMBER 27, 2001 PRICE: 1 yuan

WWW.CHINADAILY.COM.CN

Pharmacy market to open in 2003

Joint venture drugstores to pose challenge to domestic merchants

By LIU JIE
China Daily staff

China's pharmaceutical distribution sector will be fully opened to foreigners in 2003, in accordance with the country's World Trade Organization (WTO) commitments.

In 2003, foreigners will be permitted to operate both retail and wholesale businesses without capital and geographical limitations in China.

During the transition period, Sino-foreign joint venture trials will be run in key cities including Beijing, Shanghai and Guangzhou.

Yu Mingde, deputy director

and total assets must exceed US$200 million prior to their application.

The two figures on the same conditions for the Chinese side shall be more than 50 million yuan (US$6.02 million) and 300 million yuan (US$36.14 million) respectively.

The requirements for domestic companies in the western and central regions are set at 30 million yuan (US$3.61 million) and 200 million yuan (US$24.10 million) respectively.

Furthermore, if the domestic operator is a foreign trade enterprise, its annual foreign trade volume shall exceed US$50 million for three consecutive years

FAN RUJUN/Xinhua

US guest: President Jiang Zemin shakes hands yesterday in Beijing with Neal Lane, former assistant on science and technology policy to the US president.

Jiang hails more sci-tech exchanges

China and the United States have great potential for science and technology development trends and Sino-US co-operation

nological circles and entrepreneurs to co-operate with their

exchanges in the field of science and technology.

Expected tel... sp... re...

Two presidents in 1999 – discussed nanotechnology

OUTLINE

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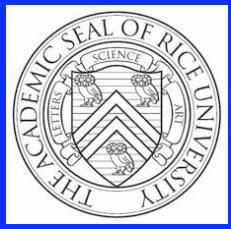

Lessons Learned

Science is a unique platform to promote cooperation, understanding and shared values among individuals communities and nations even in difficult times.

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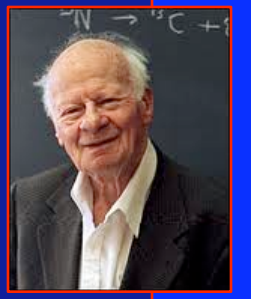
During the cold war U.S. physicists:

- Visited the USSR and China to listen and learn
- Held international meetings in USSR…
- Invited Soviet scientists to visit U.S. laboratories…
- Organized APS international activities, FIP, CIFS, CISA…
- Spoke out on arms control, freedom of scientists, etc.
  - formed Federation of American Scientists (1945)
  - Launched the Bull. of the Atomic Scientists (1945)
  - formed Union of Concerned Scientists (1969)
  - protested treatment of colleagues in communist countries
  - argued for reductions in nuclear arms and against SDI etc.



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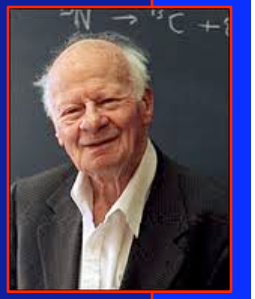
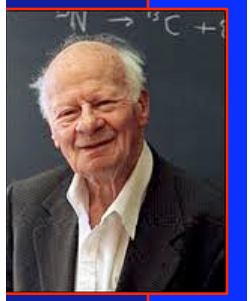


Physicists and other scientists continue to work with colleagues across the globe on matters of freedom and peaceful uses of science and technology.

Lessons Learned

Science is a unique platform to promote cooperation, understanding and shared values among individuals communities and nations even in difficult times.

Physicists and other scientists have been able to earn the trust of other peoples and other nations when official diplomats could not – our government could offer a bit more encouragement !



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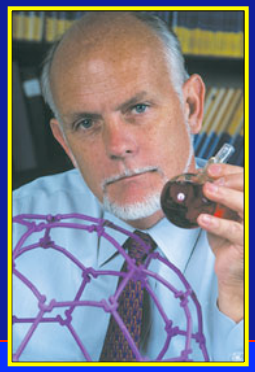
etc.

colleagues across the globe on matters of freedom and peaceful uses of science and technology.

Looking Ahead – Challenges to the World.

Rick Smalley's Top Ten Problems for the Next 50 Years

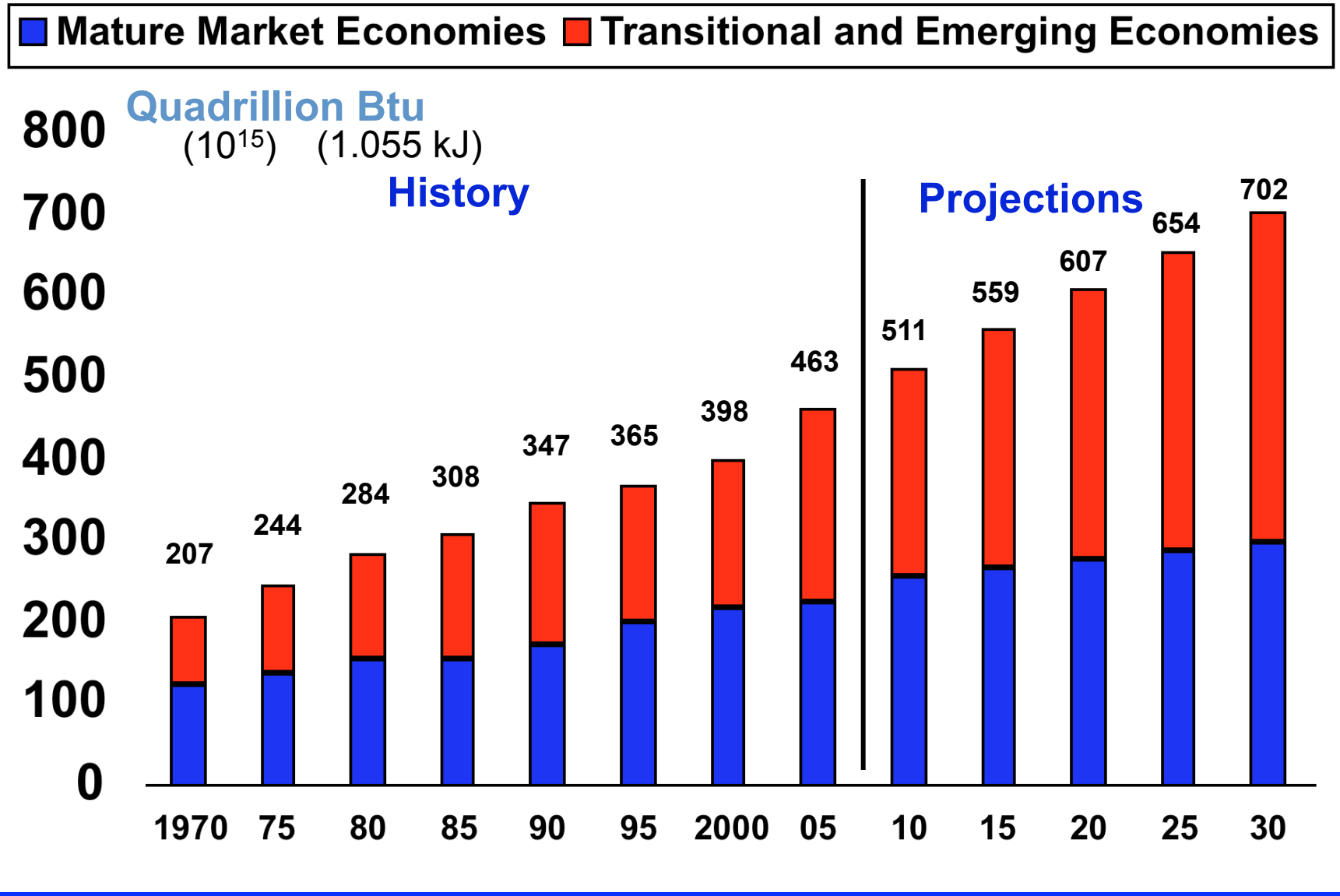
1. **ENERGY (carbon-free)**
2. WATER
3. FOOD
4. ENVIRONMENT
5. POVERTY
6. TERRORISM & WAR
7. DISEASE
8. EDUCATION
9. DEMOCRACY
10. POPULATION



Rice's Rick Smalley
(1943-2005)
Nobel Prize 2005

"The world will need revolutionary new technologies – my candidate is nanotechnology"

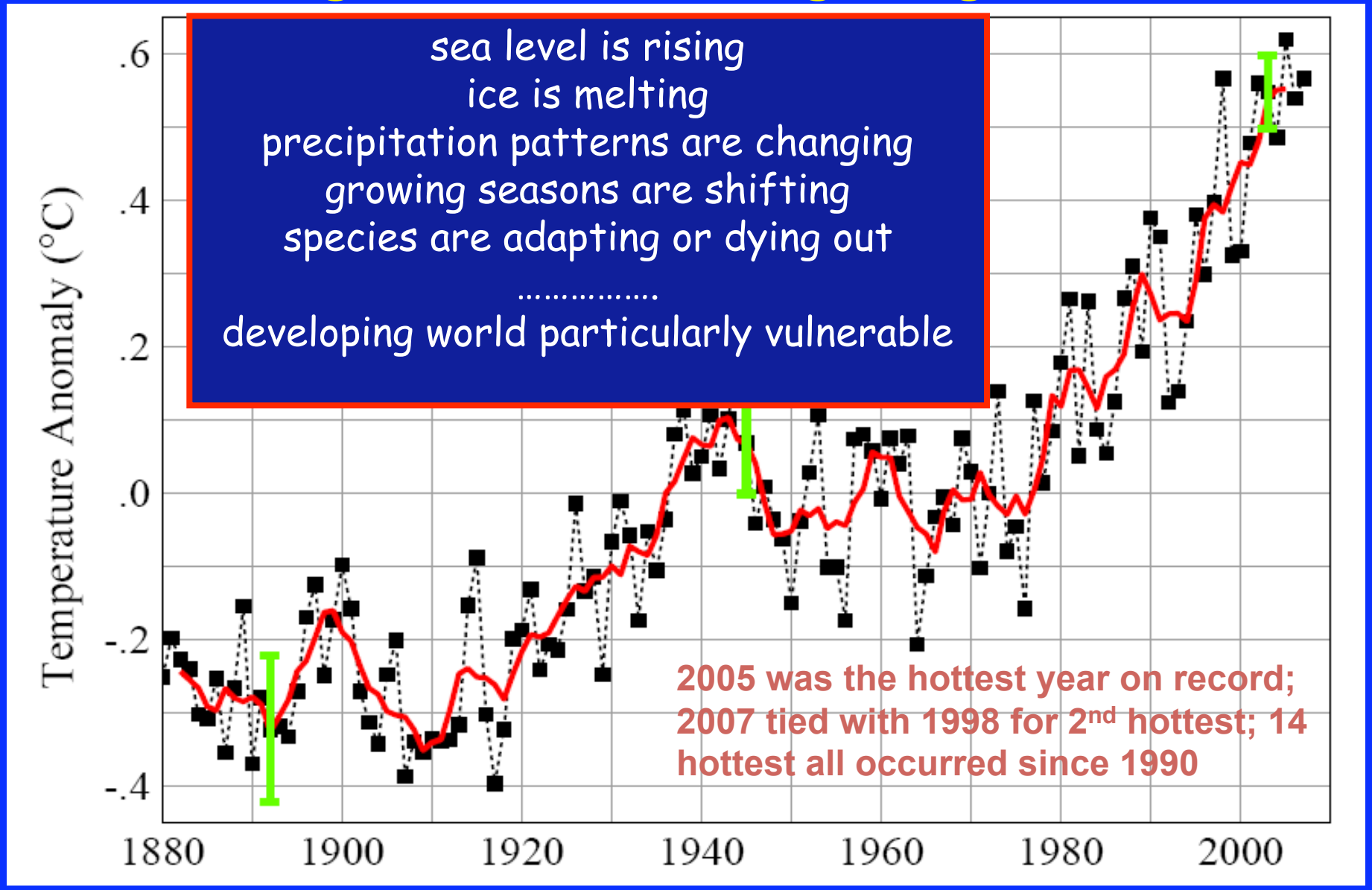
World Primary Energy Consumption, 1970-2030



Sources: **History 1970-1975**: Energy Information Administration, International Energy Database, April 22, 2008. **History, 1980-2005**: Energy Information Administration, International Energy Annual 2005 (http://www.eia.doe.gov/iea). **Projections**: International Energy Outlook 2007, DOE/EIA-0484(2007) (http://www.eia.doe.gov/oiaf/ieo).

(slide from Ralph Cicerone)

Meanwhile, atmospheric carbon concentrations are rising and the Earth is getting hotter



http://data.giss.nasa.gov/gistemp/graphs/

Looking Ahead – Challenges to the U.S.

(A Few Examples Among Many)

- **Energy** – secure supply of "clean" energy & fuels
- **Health** – affordable healthcare, personal safety
- **Economy** – workforce – innovation & competitiveness
- **Environment** – air & water – conservation - climate change
- **Physical Infrastructure** – roads, bridges, rail & air systems
- **Security** – terrorism, nuclear proliferation, wars
- **Education** – funding, standards, incentives, respect
- **Science and Technology** – R&D, translation, S&E's
- **International Cooperation** – global challenges, where US needs to be a partner in finding solutions

Looking Ahead – Challenges to Scientists

The world's 21st century problems will require:

- Major advances in science and technology;
- A renewed commitment to university research;
- Substantial growth in international research cooperation, particularly U.S. and Asia;
- Involvement of many more scientists with government policy and the general public, a role some of us call the "civic scientist."
- And, if we are serious about helping deal with global challenges, we will need global "civic scientists", – whom we might call "science diplomats"

Cong. George Brown
D-CA (1920-99)

JAMES A. BAKER III INSTITUTE FOR PUBLIC POLICY AT RICE UNIVERSITY

Science and Technology Policy Program

(Co-Director Dr. Kirstin Matthews)

- Energy and Environment (w/ Amy Jaffe)
- Health and Medicine (w/ Vivian Ho & TMC)
- Space (w/ George Abbey, former Dir. JSC)
- Nuclear Issues/ Non-Proliferation
- The Future of U.S. Science
- Education and Women in Science
- International Cooperation in S&T
- Science and the Public
- Role of Civic Scientists

RICE

Thank you !

globalcarbonproject.org