

Science + Technology

IN CONGRESS

December
2004



Keeping Politics Out of Advisory Committee Appointments

At a press conference in mid-November, the National Academies' Committee on Science, Engineering and Public Policy (COSEPUP) unveiled a new report on presidential and federal advisory committee appointments in the fields of science and technology. The COSEPUP chairman, former U.S. Representative John E. Porter, was on hand to express the importance of attracting science and technology experts into public service and the valuable role scientific advisory committees play.

The report's release comes on the heels of growing criticism that the Bush Administration has used a political litmus test to select advisory committee members. Several watchdog groups have reported that the administration has relied on candidates' political and policy preferences to determine appointments rather than the candidates' scientific knowledge and credibility, putting the legitimacy of these advisory committees into question. Even the Government Accountability Office (report GAO-04-328) has warned that the perception that committees are biased may be disastrous to the advisory system.

Most recently, the legality of using political leanings as a criterion for appointment has come under fire. In response to a request from Rep. Brian Baird (D-WA), the GAO found that several federal statutes

prohibit the use of political affiliation as a selection factor in determining members of advisory committees. This was true for a number of Department of Health and Human Services advisory committees and led Rep. Baird to call for a Justice Department investigation of instances where advisory candidates had been asked their political preferences by agency employees.

At the COSEPUP event, Rep. Porter cited the need for scientific advisory committees

to be free from politicization and to "be and be seen as partial and independent." Although COSEPUP representatives stated that they had not examined specific allegations and their guidelines make no reference to actions of the current administration, the report does wade into the recent politicization arguments. In fact, the report recommends that any committee requiring technical expertise should

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Final Numbers - R&D in FY05 Appropriations

On December 8, President Bush closed the fiscal year (FY) 2005 budget process by signing into law a \$388 billion omnibus appropriations bill (PL 108-447) that Congress gave final approval to just two days prior. The bill wraps up the final nine appropriations.

AAAS estimates that the total federal research & development (R&D) portfolio in the FY 2005 budget will be a record-breaking \$132.2 billion, a \$6.0 billion or 4.8 percent increase. Eighty percent of the increase goes to defense R&D programs, primarily for weapons development. The total nondefense R&D investment rises by \$1.2 billion or 2.1 percent to \$57.1 billion, better than the 1 percent increase overall for domestic programs but far short of previous increases.

While most R&D funding agencies see modest increases, the National Science Foundation (NSF) sees a cut in its R&D portfolio, coming only two years after Congress approved a plan to double the agency's budget over five years. The National Institutes of Health (NIH) budget increases just 2 percent. Although the National Aeronautics and Space Administration (NASA) budget increases by 4.5 percent to \$16.1 billion, the bulk of the increase goes to returning the Space Shuttle to flight, leaving NASA R&D up just 2 percent.

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... the 10,000-year old Inuit language has no word for robin, yet the bird is now thriving in the warmer Arctic climates. TURN TO PAGE 2

Climate Change Doesn't Dissipate

Sen. John McCain (R-AZ) used his last hearing as chairman of the Senate Committee on Commerce, Science, and Transportation to continue to push for legislation dealing with the causes of climate change. McCain convened the hearing to review the sobering conclusions of a new study on climate change in the Arctic. He called the study, which encapsulates the work of 300 scientists from around the world over four years, the "canary in the coal mine" of climate change. Sen. Frank Lautenberg (D-NJ) agreed, calling the report's conclusions "chilling."

In testimony before the committee, Dr. Robert Corell, chair of the group that produced the Arctic Climate Impact Assessment report and a senior fellow at the American Meteorological Society, listed some of the expected effects of global warming on the Arctic region and on the earth as a whole. He said that between 1990

A decrease in the total surface area of glaciers and other snow-covered regions would result in more landmass exposed and more of the sun's rays being absorbed...

and 2090, it is estimated that the global surface air temperature will increase 15° to 18°F. Consequently, glaciers will melt at an accelerated pace, leading to a one-meter rise in sea level and a decrease in oceanic salinity.

Such a dramatic change in snow cover would mean a reduction in the reflectivity of the Arctic region, Corell said. He explained that approximately 80 percent of the sun's rays are bounced or "reflected" away from the earth's surface by snowmass. A decrease in the total surface area of glaciers and other snow-covered regions would result in more landmass exposed and more of the sun's rays being absorbed by

the earth, thus, speeding the melting process. Corell likened the change to that of a less-than-effective air conditioner.

Furthermore, a decrease in salinity could hamper the ocean's circulation system, leading to cooling trends in Europe as the rest of the earth warms. Dr. Corell emphasized that even if we act now, it might take a few hundred or a thousand years to put the breaks on the hurtling "supertanker" of global warming.

The hearing also provided an opportunity to glimpse the leadership style of the incoming Commerce chairman, Sen. Ted Stevens (R-AK), who has been fixated on the impact of climate change to his state. Corell stated that parts of the Alaskan region are warming 8°-10°F more than the average global rate leading to a recession of the ice sheets that used to protect the shoreline of coastal towns. Once exposed the villages no longer have a buffer against the severe summer storms that hit annually. In addition, rising temperatures have started melting the permafrost, destabilizing foundations and in some cases leading entire buildings to collapse.

Stevens acknowledged witnessing the devastation that many of these coastal vil-

lages have experienced and vowed to hold future hearings on the subject in the 109th session.

...in just the past thirty years the average amount of Arctic sea ice lost is equal to the size of Arizona and New York combined.

Susan Hassol, an independent science writer and an ACIA author, described the negative effects of warming in more human terms. For example, she stated that the 10,000-year old Inuit language has no word for robin, yet the bird is now thriving in the warmer Arctic climates. Furthermore, in just the past thirty years the average amount of Arctic sea ice lost is equal to the size of Arizona and New York combined. Despite these claims, McCain expressed concern about skeptics like the George C.

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Flu Vaccine: A Search for Answers

On October 5, 2004, British officials shut down a Chiron plant in England, effectively disrupting half of the U.S. flu vaccine supply. The constituent outcry and resulting media coverage of hundreds of senior citizens waiting in long lines, so close to the election, led to a flurry of hearings in both congressional chambers.

At a House Government Reform Committee hearing, Rep. Henry Waxman (D-CA) asserted that the Food and Drug Administration (FDA) could have averted the crisis. According to federal employees he spoke with, contamination at the plant was found as early as June 2003 and never rectified. Both FDA Chairman Lester Crawford and Chiron CEO Howard Pien, however, argued that all problems with the facility had been fixed and that the troubles arising in 2004 were unrelated to contamination the prior year, when the factory was under different

ownership. They buttressed this assertion by pointing to the fact that the company had successfully produced viable vaccines after the initial incident.

...contamination at the plant was found as early as June 2003 and never rectified.

Waxman, nonetheless, pressed on in his criticism of the agency, citing fewer FDA warnings to pharmaceutical companies, and a lack of enforcement of laws govern-

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Advisory Committees

Continued from page 1

nominate persons on the basis of their knowledge, credentials, and professional and personal integrity, noting that it is inappropriate to ask nominees to provide "non-relevant information, such as voting record, political party affiliation, or position on particular policies."

The report also recommends the expeditious identification and appointment of a confidential Assistant to the President for Science and Technology (APST) soon after the presidential election, assuring that the President or President-elect has an immediate science advisor. Post-inauguration, the APST would be nominated for the directorship of the Office of Science and Technology Policy, a position which may take months for Senate confirmation. Part of the duties of the APST would be to seek input from a diverse set of "accomplished and recognized S&T leaders" when seeking nominees for committees.

Because filling advisory committees can be an arduous practice for candidates, COSEPUP has several recommendations related to improving the nomination and appointment process. They suggest that the President and Senate should "streamline and accelerate the appointment process for

S&T personnel," including a simplification of the appointment procedures. This could be done through more efficient background checks, a standardization of pre- and post-employment requirements, simplified financial-disclosure reporting, and a continuation of health benefits. These measures would reduce the burden that a prolonged nomination process bestows on nominees and hopefully make a scientific advisory position more attractive to the best candidates.

Along the same lines, COSEPUP also suggests the administration increase the visibility and transparency of the appointment processes. For example, the search for committee appointees should be widely announced to obtain suggested nominees from all interested parties. Conflict-of-interest policies for committee members should be clarified and made public. In addition, agency staff who oversee committee operations should be properly

trained and held "accountable for its implementation."

Unfortunately, with the immense partisanship attached to the politicization of science debate it may be difficult to have the COSEPUP's recommendations come to fruition. In a recent *Science* magazine (a AAAS publication) article, the administration is quoted as praising the National Academies report, yet seeing no need to change how scientific advisory candidates are vetted. ●●●

FOR MORE INFORMATION:

The Academies' COSEPUP report is available at - <http://www.nap.edu/catalog/11152.html>

GAO report of Federal Advisory Committee Appointments - <http://www.gao.gov/new.items/do4328.pdf>

GAO Response to Rep. Baird - <http://www.gao.gov/decisions/other/3o3767.htm>

Recent AAAS Publications

Making Each Vote Count: A Research Agenda for Electronic Voting

Examines the state of electronic voting systems and offers a research roadmap for voting technologies.

Available at: <http://www.aaas.org/spp/sfml/evoting/report2.pdf>

Standing Our Ground: A Guidebook for STEM Educators in the Post-Michigan Era

Helps guide university counsels through the Grutter and Gratz rulings and clarify legally defensible options for protecting diversity in science and engineering programs.

Available at: <http://www.aaas.org/standingourground/>

Climate Change

Continued from previous page

Marshall Institute that have criticized the scientific underpinnings of the report, stating that "science is not yet able to distinguish the effects of natural variability from those caused by human activities." Correll assured the committee that upon forming the ACIA international group, only the top scientists in the world were recruited and that not one scientist declined his or her help. He further stressed that one chapter of the report was published in the peer-reviewed journal, *Ambio*, and a few others await acceptance. Hassol, too, reminded the Senators that scientists have a 40,000 year record of global climate, and that we have now gone outside the range of normal variation.

The second part of the hearing focused on the federal government's climate monitoring programs in Antarctica. Dr. Ghassem Asrar, deputy associate director for Science Missions at NASA, stated that advancements in remote sensing technology have assisted in improving the accuracy of the measurements of change that have occurred in glaciers and sea ice. He noted that while the South Pole has recently grown

cooler as a result of ozone depletion, the trend is expected to reverse in the next few decades.

One key issue touched upon by the Senators was the reliability of computer models used to predict climate trends. Dr. Scott Borg, section head for the National Science Foundation's Polar Programs, admits that there are many phenomena in the climate that scientists cannot model well. Many good models exist, and almost all show the same basic warming trends.

Finally, Dr. Drew Shindell, a NASA climatologist, compared the threat of global warming to the dangers of smoking: while the scientific evidence is readily available to all, many individuals still smoke, just as many nations continue to produce greenhouse gases. And while both smoking and global warming may not kill you immediately, in a few decades they might be lethal. ●●●

FOR MORE INFORMATION:

Copies of the report are available at www.acia.uaf.edu or www.cambridge.org

Final FY05 Appropriations

Continued from page 1

There are some clear winners in the non-defense R&D portfolio. U.S. Department of Agriculture (USDA) R&D receives a 7.8 percent boost to \$2.4 billion because of new laboratory investments and R&D earmarks. R&D in the National Oceanic and Atmo-

ocean R&D. The National Institute of Standards and Technology's (NIST) support of its intramural laboratory R&D increases 16.2 percent to \$328 million; NIST's Advanced Technology Program (ATP) wins another reprieve from Administration plans to eliminate it.

The total federal research investment (basic and applied) increases 2.5 percent to an estimated \$57.0 billion because of large increases in the defense and homeland security research portfolios. Growth in other research portfolios slows down considerably or reverses compared to recent years. The federal development investment, however, continues recent trends with another dramatic boost of 6.5 percent to \$70.5 billion, almost exclusively in defense.

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spheric Administration (NOAA) climbs 10.7 percent to \$684 million due to congressional support for the U.S. Commission on Ocean Policy recommendation to boost

R&D Earmarks in the FY 2005 Appropriations

R&D earmarks total \$2.1 billion in FY 2005, up 9 percent from last year, according to the AAAS analysis of congressionally-

If you want more detailed budget information, check out...

Congressional Action on Research and Development in the FY2005 Budget

Forty-two pages of detailed analysis of R&D in the President's budget for FY 2005 as approved by Congress, including major funding trends and details on the final FY 2005 budgets of the major R&D funding agencies.

Full text and supplemental material available online at <http://www.aaas.org/spp/rd/ca05main.htm>

designated, performer-specific R&D projects in the FY 2005 appropriations bills.

Although these projects amount to only

1.6 percent of total R&D, they are concentrated in a few key agencies and programs. Four agencies (USDA, \$239 million; NASA, \$217 million; DOE, \$274 million; and DOD, \$1.0 billion) receive 85 percent of the total R&D earmarks, while NIH, NSF, and the new DHS remain earmark-free. In some programs, earmarks make up 1 out of every 5 program dollars.

FY 2005 R&D earmarks are up more than a third from 2002 and 2003 after a dramatic jump last year. The total number of earmarks is increasing faster than dollar growth, suggesting that the size of the average earmark is shrinking in an era of tight budgets but increasing constituent demand. ●●●

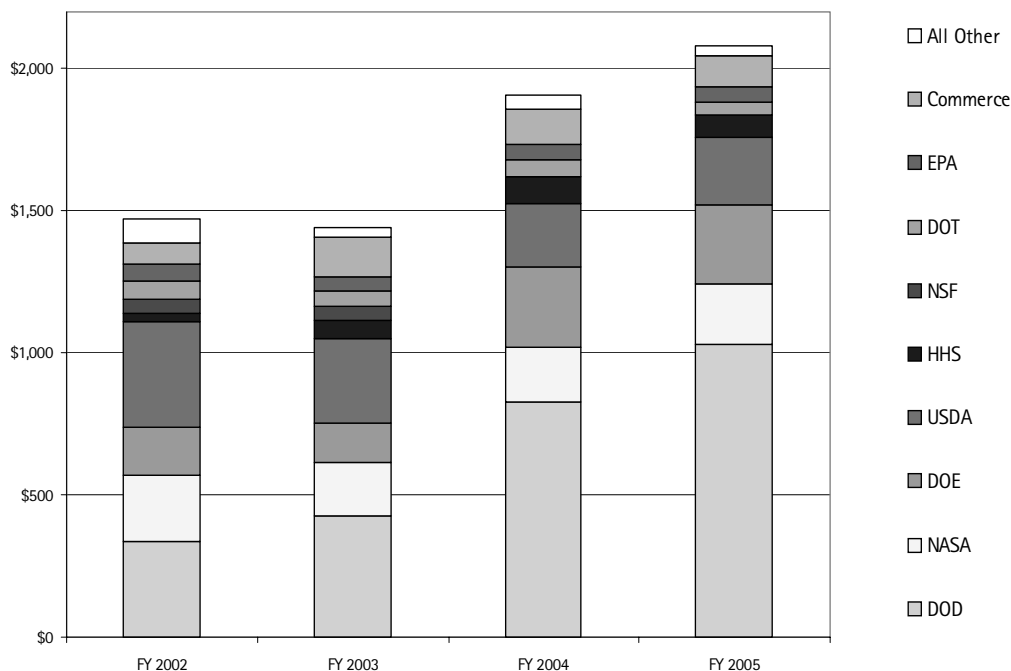
Kei Koizumi

AAAS R&D Budget and Policy Program

<http://www.aaas.org/spp/rd>

R&D Earmarks in FY 2002-05 Appropriations

(Budget authority in millions of dollars)



AAAS estimates of R&D earmarks based on FY 2002-2005 conference or omnibus appropriations bills. NOV. '04 © 2004 AAAS

CONGRESSIONAL RESEARCH SERVICE

Copies of CRS reports for congressional use are available by calling 202/707-7132.

- **The Electoral College: An Overview and Analysis of Reform Proposals (RL30804)**
This timely report details the long history of the Electoral College and the many attempts at its reform. Criticisms have focused on problems related to state representation, the two-party system, and disputed elections, but supporters point to the high success rate of the process and its delicate handling of America's complex federalist system. The report also lists the most prominent reform plans and describes the steps necessary for any future change to the Electoral College system.
- **Nuclear Energy Policy (IB88090)**
Policymakers currently face a number of challenging issues in nuclear energy policy, including radioactive waste management, research and development priorities, power plant safety, and terrorism. This report reviews the funding priorities of the Department of Energy under President Bush and explores the economic aspects of the development and utilization of different forms of energy. A summary of energy legislation considered by the 108th Congress is provided, with detailed analysis of various legislative approaches.
- **Monitoring Foreign Students in the United States: The Student and Exchange Visitor Information System (SEVIS) (RL32188)**
This ongoing report describes the legislative development of SEVIS, a system set in place to monitor foreign students studying in the United States. It details important aspects of SEVIS, including funding, scope, and tracking mechanisms and catalogues some of the SEVIS problems encountered by schools including delays in the issuing of visas and difficulties with fee payments. The report discusses the ability of DHS to utilize SEVIS and its efficacy in tracking potentially dangerous visitors to the United States.

GOVERNMENT ACCOUNTABILITY OFFICE

Copies of GAO publications are available online at www.gao.gov or by calling 202/512-6000.

- **Flu Vaccine: Recent Supply Shortages Underscore Ongoing Challenges (GAO-05-177T)**
Flu vaccine distributors in the United States typically choose a single manufacturer to provide all of their vaccine, a practice proven extremely hazardous by this year's shortage. While some medical facilities had sufficient quantities of vaccine, others had none. This report studies logistical challenges inherent in flu immunization, focusing on spikes in supply and demand and private distribution channels. While the report acknowledges steps the CDC has taken to alleviate the shortage, it also calls for a system to ensure priority immunization of high risk individuals in the case of an emergency.
- **Environmental Indicators: Better Coordination Is Needed to Develop Environmental Indicator Sets That Inform Decisions (GAO-05-52)**
Environmental indicators are quantitative measurements that are used to assess the state of the environment and the progress made towards various goals. In this report, GAO examines the guidelines that agencies set forth in developing environmental indicator sets and analyzes the processes used to choose these tools. The report describes inherent challenges in designing indicator sets and relates these difficulties to problems the EPA has faced in linking its policies to environmental effects.
- **Unmanned Aerial Vehicles: Changes in Global Hawk's Acquisition Strategy Are Needed to Reduce Program Risks (GAO-05-6)**
The Global Hawk aircraft can transmit images taken in hazardous conditions without the need to place a pilot at risk. This report details the history of the Global Hawk's development and the current steps being taken by the Department of Defense to facilitate its production. Several advanced technologies still need to be developed and will only be ready after most of the planes have already been purchased. The report analyses this risky practice of concurrent development and production strategy and predicts a cost above the stated goals.

THE NATIONAL ACADEMIES

Government offices may obtain single complimentary copies by calling the Office of Congressional and Government Affairs at 202/334-1513. Others may order copies from the National Academy Press (800/624-6242, www.nap.edu).

- **Confronting the Nation's Water Problems: The Role of Research (ISBN: 0-309-09258-2)**
This report calls for a renewed commitment to research on water resources in America, along with coordination of the twenty federal agencies currently performing research in the field. Competition for water, challenges to aquatic ecosystems, and the threat of waterborne disease have all made this a vital subject of inquiry. The report suggests an additional \$70 million in funding to water research programs, with increased focus on water supply, demand, and especially water usage, which has seen a dramatic funding cut in recent years.
- **Computer Science: Reflections on the Field, Reflections from the Field (ISBN: 0-309-09301-5)**
This report describes the basic elements of computer science research and explores several exciting areas of current investigation, as well as some historical examples of innovation in the field. The report, which contains chapters submitted by leaders in the field, attempts to improve understanding of computer science research among policymakers and the general public, and to present a taste of what technologies may lay ahead.

scientific definitions

1. The act of making clear and distinct.
2. the act of stating a precise meaning or significance.

VACCINE TERMS

Antigens: Foreign substances (e.g. bacteria or viruses) in the body that are capable of causing disease. The presence of antigens in the body triggers an immune response, usually the production of antibodies. (CDC)

Attenuated vaccine: A vaccine in which live virus is weakened through chemical or physical processes in order to produce an immune response without causing the severe effects of the disease. Also known as a live vaccine. (CDC)

Bioburden: The population of viable micro-organisms present on a material or product. (isotron.com)

Community immunity: Having a large percentage of the population vaccinated in order to prevent the spread of certain infectious diseases. Even individuals not vaccinated (such as newborns and those with chronic illnesses) are offered some protection because the disease has little opportunity to spread within the community. Also known as herd immunity. (CDC)

Inactive vaccine: A vaccine made from viruses and bacteria that have been killed through physical or chemical processes. These killed organisms cannot cause disease. (CDC)

NIAID: The National Institute of Allergy and Infectious Diseases serves to support and conduct research and research training that strives to understand, treat, and ultimately prevent the myriad infectious, immunologic, and allergic diseases that threaten millions of human lives. (NIAID)

Pandemic: An epidemic that becomes very widespread and affects a whole region, a continent, or the world. (medterms.com)

MHRA: The Medicines and Healthcare products Regulatory Agency serves to promote and safeguard public health through ensuring appropriate standards of safety, quality and efficacy for all human medicines on the UK market. (MHRA)

Reverse genetics: Identifying genes purely on the basis of their position in the genome with no knowledge whatsoever of the gene product. (medterms.com)

Strain: A specific version of an organism. Many diseases, including HIV/AIDS and hepatitis, have multiple strains. (CDC)

Vaccine Adverse Event Reporting System (VAERS): A database managed by the Centers for Disease Control and Prevention and the Food and Drug Administration. VAERS provides a mechanism for the collection and analysis of adverse events associated with vaccines currently licensed in the United States. (CDC)

Vaccine Injury Compensation Program (VICP): VICP provides liability protection to both vaccine companies and health care providers. It's purpose is to ensure an adequate supply of vaccines, stabilize vaccine costs, and maintain an accessible and efficient forum for individuals thought to be injured by childhood vaccines. (hrsa.gov)

Flu Vaccines

Continued from page 2

ing television drug ads and food labeling as evidence that the FDA had become too passive in their oversight. Crawford defended his agency by maintaining that he properly followed FDA policy. Though Committee Chairman Rep. Thomas M. Davis III (R-VA) noted that the agency's policies might need some modification, the hearing focused mainly on the economic and legal climate that is driving manufacturers beyond U.S. borders.

In his statement, Pien stressed the need for more vaccine manufacturers in the United States, and recommended raising the price the government pays per dose, offering financial incentives, and reforming liability laws as mechanisms to encourage U.S. domestic production. The most effective measures, however, would be for the government to encourage broader immunization among the public and to buy out surplus vaccines. Pien claimed that this would create a constant demand and stabilize production decisions for manufacturers.

To illustrate the need for a diverse portfolio of vaccine manufacturers, some concerned panelists outlined a worst case scenario: a devastating pandemic might lead the United Kingdom to appropriate all British-manufactured vaccines intended for the United States. Pien urged Congress to take the current shortage as a warning and to begin discussing the pandemic scenario with the British government before it happens.

Many of these concerns were also echoed during a hearing before the Senate Special Committee on Aging. Peter Paradiso, a representative of Wyeth Pharmaceuticals, described his company's decision to pull their FluShield product due to what he perceived as a harsh regulatory environment. He suggested the committee consider the whole vaccine industry, which he claims is hampered by low government prices, high risk, and cumbersome liability laws. Paradiso cited the troubling number of lawsuits purporting links between autism and vaccinations as an example for the need for immediate reform before vaccine shortages in a host of childhood diseases create an even bigger crisis for the country.

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Flu Vaccines

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Support for private-sector incentives thus far has fallen along party lines. In the House, Rep John Mica (R-FL) argued that tort reform was the single highest priority. Waxman, however, vociferously denied this. He argued that the Vaccine Injury Compensation Program (VICP) had effectively solved most vaccine liability issues, and emphasized that flu shots are safe and very seldom result in lawsuits.

In both hearings, a consensus formed around the importance of basic research into new scientific discoveries. At the House Government Reform hearing, Anthony Fauci, director of the National Institute of Allergy and Infectious Diseases (NIAID), noted that federal funding for influenza research alone has risen in the last few years from \$21 million to \$66 million. Of priority are advancements in recombinant DNA technology, the genetic sequencing of several thousand flu viruses, and the development of vaccines derived from cell-cultures. Another critical research goal is to establish a more robust development pipeline for new antiviral drugs in case of human resistance, which, Fauci warned, is inevitable.

Regardless of whether U.S. policymakers seek new scientific or private-sector solutions to the current vaccine shortage, our reliance on overseas manufacturers will need to be addressed. The British government recently extended the suspension on Chiron Corporation's license to produce vaccines, greatly reducing the likelihood that the company will be able to manufacture doses in time for next year's flu season. ●●●

FOR MORE INFORMATION:

NIH's Informational website on influenza and vaccinations <http://www.nlm.nih.gov/medlineplus/influenza.html>

CDC's Informational website on influenza <http://www.cdc.gov/flu>

AAAS NOTES

COME CHECK OUT THE AAAS SCIENCE AND POLICY PROGRAM AT THE 2005 AAAS ANNUAL MEETING

February 17-21, 2005

Marriott Wardham Park Hotel, Washington, DC

The Nexus: Where Science Meets Society

The meeting offers an interdisciplinary blend of more than 150 symposia; plenary and topical lectures, and special events. Symposia cover everything from anthropology and culture to technological innovations. Seminars will focus on nanotechnology, data-intensive biology, and K-12 science education.

Special Events:

- Nanotechnology Seminar - On Thursday and Friday, attend a seminar that will examine areas where research is opening exciting, new, potential applications. Learn how the intersection of chemistry, physics and biology at the nanoscale could lead to revolutionary approaches for medical diagnoses and treatment of diseases, energy production and computing.
- Family Science Day - On Saturday and Sunday, visit the AAAS Exhibit Hall to find inspiration in lab demonstrations and other kid-friendly chemistry projects, to visit a Rainforest, and to participate in other intriguing events that show the fun of science.
- World Year of Physics - On Sunday, listen to Sylvester James Gates, Jr., a pioneer in the search for a new vision of physical reality, give a lecture on string theory and how it describes all four forces of nature and all of matter within a single, all-encompassing framework.
- Plenary Lectures - On Monday, hear from Julie Louise Gerberding, director of the Centers for Disease Control and Prevention. She will speak on our nation's capacity to protect the public's health during an era marked by disquieting medical news.

Registration is now open: <http://registration.expoexchange.com/showAAA051/>

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30th ANNUAL AAAS FORUM ON SCIENCE AND TECHNOLOGY POLICY

April 21-22, 2005 in Washington, DC

More Information at <http://www.aaas.org/spp/rd/forum.htm>

Science and Technology in Congress (ISSN# 1096-0406) is published by the Center for Science, Technology, and Congress (CSTC) at the American Association for the Advancement of Science (AAAS). It is distributed 8 times per year: February through August and October. Issue Updates are published periodically to supplement the newsletter.

AAAS is a non-profit, non-partisan organization. Since it was founded in 1848, AAAS has been dedicated to the advancement of scientific knowledge for the good of society as a whole.

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Frontiers in Science



Probing the Heart Disease Gender Gap • A recent study led by researchers at the University of Pennsylvania suggests that Cox-2 inhibitors, like the recently shelved Vioxx, may leave young women at greater risk for cardiovascular disease, making them equally as susceptible as men. Scientists elucidated a pathway where estrogen increases blood levels of Cox-2, which in turn helps produce a fatty acid called prostacyclin. Mice genetically predisposed to atherosclerosis and lacking the prostacyclin receptor showed equal rates of heart disease in both males and females. This suggests that prostacyclin serves a crucial role in protecting perimenopausal women from heart disease, and that Cox-2 inhibitors may be especially risky for them.

—>*Science, November 19, 2004*

Green Tea Therapy • According to a recent study led by Hasan Mukhtar of the University of Wisconsin, chemicals in green tea called polyphenols (GTP) can help prevent progression of prostate cancer in mice. They work by decreasing levels of IGF-1, a protein correlated with increased risks for prostate, breast, lung and colon cancers. GTP's also play a role in reducing the expression of genes

associated with metastasis in cancer. Additionally, the study found that GTP's diminished tumor growth by reducing serum levels of VEGF, a growth factor that recruits blood vessels to tumors and helps nourish them. These powerful anti-tumor effects help explain some of the benefits of green tea that have been known for centuries.

—>*Cancer Research, December 1, 2004*

Novel TB Drug Shows Promise • Researchers in Belgium have discovered a new drug for treatment of tuberculosis, a disease which kills approximately two million people each year. Current antibiotic therapies require up to nine months of daily usage, a difficult regimen that often fosters drug resistance when not properly followed. Studies in test tubes and mice show that the new drug, called R207910, works through a novel mechanism that leads to faster, more potent relief from TB. Used in combination with current drugs, early data indicate that it may serve as a safe and effective treatment to successfully combat multi-drug resistant strains.

—>*Science, December 10, 2004*