NSC International Cooperation Sci-Tech Newsbrief

No.8 August 2004

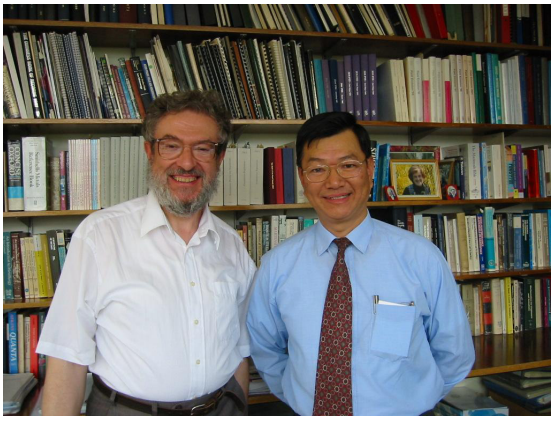
Published jointly by Department of International Programs and Science and Technology Divisions of Representative Office of R.O.C., National Science Council of the Executive Yuan, R.O.C.

Edited by Science and Technology Information Center, National Science Council

August 31, 2004

News Clips

Science and Technology Division of Taipei Representative Office in the United Kingdom Promotes Joint Research on Nanotechnology Between Taiwan and the UK



Mr. James H. C. Chang, Director of the Science and Technology Division of Taipei Representative Office in the UK, met with Professor George Smith, head of the Department of Materials at Oxford University and discussed about promoting possible joint activities between Taiwan and the UK in the field of nanotechnology as well as NSC-sponsored projects that provide funding for Ph.D. students who wish to study abroad. Professor Smith has been invited to visit Taiwan during August 16th~22nd, 2004. As part of his itinerary, he is expected to meet with Dr. Maw-Kuen Wu, Minister of the National Science Council; participate in "The sixth Taipei Symposium on Surfaces, Thin Films and Nano Sciences (Celebrating Professor Tien Tsong's 70th Birthday)", and give a guest lecture at National Chiao-Tung University. *(Science and Technology Division/ Taipei Representative Office in the United Kingdom)*

Representative from the Science & Technology Division of Taipei Representative Office in the UK Visited Institute of Nanotechnology in Scotland

Ms. Isabelle Chen, Deputy Director of the Science and Technology Division of Taipei Representative Office in the UK, visited Institute of Nanotechnology (ION) located in the University of Stirling Innovation Park on June 24 and took a photograph with Mrs. Ottilia Saxl, Director of ION, Mr. Andy Garland, the IT manager, and Mr. Andrew Stewart, also from the IT division. The trip succeeds an earlier visit made by Prof. Dr. Hsien-Chun Meng, Director of the Science and Technology Information Center (STIC), and represents another attempt to establish collaboration in the field of nanotechnology between two countries. *(Science and Technology Division/Taipei Representative Office in the United Kingdom)*

Sci-Tech Taiwan

Government Promoted Policy and Achievement in the Exhibition of Automation

To help industries fully understand the current status of industry automation Taiwan government has promoted and consulted, several institutions including National Information and Communications Initiative Committee (NICI) of Executive Yuan, Council of Agriculture, Construction and Planning Agency of Minister of the Interior, Industrial Development Bureau of Minister of Economic affairs, Department of Industrial technology, Small and Medium Enterprises Administration, Mechanical Industry Research Laboratories of ITRI and Industrial Metal Research & Development Center have demonstrated solid achievement of government consultation for industries in recent exhibition of 2004 industry automation & electronic/mechanic equipment. The content of the exhibition includes: the progress of manufacturing automation and e-commerce, the establishment of infrastructure of B to B & B to C e-business, promotion of post-modern agriculture, elevation of sales efficiency of agricultural products, automation modules and integration of construction and production, diminution of digital gaps among enterprises, and promotion of e-commerce consultation for small and medium enterprises. *(Science and Technology Information Center)*

Taiwan Wins One Gold and Three Silver Medals in Biology Olympiad

The news of success in the 15th International Biology Olympiad has been reported. Taiwan team earned one gold and three silver medals, which is ranked in the third best among 50 competitors, led by the U.S. and Singapore. Moreover, the Biology Olympiad 2010 will be held in Taiwan; concerning the contest, Director Lee Jan-yao, Department of Secondary Education of Ministry of Education, indicated that it would be great help to improve the development of local biology education in senior high school and build up the reputation of Taiwan in the world. *(Science and Technology Information Center)*

Seminar of Competition and Cooperation Deployment of New Technologies and Patents

Since nanotechnology has brought up innovative opportunities for industry techniques, the evaluation of investment efficiency and risk of industries will be the preliminary work of competitive deployment of future market. The National Science Council (NSC) and Industrial Development Bureau of Ministry of Economic Affairs (MOEAIDB) have hold serial seminars regarding to competition and cooperation deployment of new technologies and patents. The NSC minister, Dr Maw-Kuen Wu, stated that currently the development of domestic nanotechnology is still at early stage and business societies and academic communities should pay more attention to the activity development and right protection of innovative techniques; only then can these intangible assets such as talents and intelligence property rights come with more aggressive meaning in the activities of future knowledge-driven economy industries. *(Science and Technology Information Center)*

Taiwan's R&D Capability of Technology Once Again Get Acknowledged Through Participation of AMS Project

The Chung-Shan Institute of Science and Technology, Armaments Bureau. M.N.D. has developed highly reliable electronic module with 10 times efficiency as current apparatus by participating in Anti-matter Spectrometer (AMS) project, which is sponsored by U.S. NASA and hosted by Dr. Samuel Ting, a laureate Nobel Prize in Physics and also a member of Academia Sinica. Dr. Ting indicated that Academia Sinica‘s participation in this project did win Taiwan high acknowledgement and respect of U.S. NASA in technology ability and also elevate its awareness in the world. *(Science and Technology Information Center)*

Precision Machinery Research and Development Center Introduces Mano-Technology into Opto-Electronics Industry

To enhance the competitiveness of the flat panel display companies in Taiwan, the Precision Machinery Research and Development Center, Industrial Technology Research Institute (ITRI), starts to research the technology related to carbon nanotube filed emitting display (FED). Compared with the present two display technologies, LCD and PPD, the new technology has the advantages of low cost, electricity saving, and high view angle. After its commercial production in the future, FED is expected to become the next generation of mainstream flat panel industry in Taiwan. *(Science and Technology Information Center)*

Ministry of Economic Affairs (MOEA) Supports Optoelectronic Firms for Lowering Manufacturing Equipment Cost

The growing risk of global competition has drastically affected management costs and competency of Taiwan's optoelectronic industry. In order to increase the ratio of domestic production on LCD manufacturing equipment, Industrial Development Bureau (IDB) of Ministry of Economic Affairs (MOEA) intensively calls together and consults the Mechanical Industry Research Laboratories (MIRL) of Industrial Technology Research Institute (ITRI), Chung-Shan Institute of Science & Technology, Precision Machinery Research & Development Center and Metal Industries Research & Development Center. IDB estimated that the ratio of domestic production on LCD manufacturing equipment would rise from 30% now to more than 50% in 2008. *(Science and Technology Information Center)*

Mark of Nanotechnology Will Be Eligible for Application of Consumer Products by the End of 2004

After referring to the successful domestic models such as food regulation and environment protection, Industrial Development Bureau of Ministry of

Economic Affairs (MOEAIDB) decided to set up a mechanism of application, review, and audit of nonotechnology-related products by adopting emblem certification. Taiwan's mark for nonotechnology will then be the first one in the world. It is estimated that by the end of 2004 the emblem will be eligible for application of 1-2 consumer product types. *(Science and Technology Information Center)*

Industrial Technology Research Institute (ITRI) Promotes the RFID Mentoring Project

The Business\Logistics Hub and Radio Frequency Identification (RFID) Mentoring Project, planned by the Department of Commerce, Ministry of Economic Affairs, and executed by ITRI, is expected to activate shortly. With the promotion of the RFID and Hub as well as related strategy initiation, knowledge service, and system technology mentoring, it is hoped to kick off the development of the RFID industry, creating a new safety industry. *(Science and Technology Information Center)*

Four-Year Program to Reduce Smes' Digital Divide

Small & Medium Enterprise Administration of Ministry of Economic Affairs (MOEA) recently presented a "Reducing Digital Divide Project", which would provide variety of assistance & services regarding users' needs and build up E-commerce infrastructure for those enterprises with rather weak digital competence. This project which Small & Medium Enterprise Administration provided would be carried out in four years, expecting to reach 150 thousand broadband network users, 100 thousand E-commerce users raised and bring up to 7,000 million businesses of information services by the completion of the project. *(Science and Technology Information Center)*

Progress in R&D of SARS Vaccine

Dr. David Ho, a member of Academia Sinica, indicated recently that he tried to develop an anti-SARS vaccine, which was made from S-protein on the surface of SARS virus. The initial in living trial conducted in monkeys has proved the efficacy of protection. Dr. Ho expressed that the timeline of human trial has yet been decided, although in the animal study some progress has been observed. *(Science and Technology Information Center)*

The Academicians Meeting of Academia Sinica Held Lately

The 26th Academician Meeting of Academia Sinica was held lately. In recent years, Academia Sinica has established institutions such as Genomics Research Center, Research Center for Environmental Changes, and Research Center for Biodiversity, wishing to make contributions to sustainable development of mankind by its academic achievements. Taiwan President Shui-Bian Chen indicated in the opening speech that it is hoped that Academia Sinica could make thorough comprehension on issues of Taiwan's climatic change, environmental pollution, ecological resources conservation and re-establishment so that help the Government to work out strategies on related issues. *(Science and Technology Information Center)*

Sci-Tech News

Quantum Computing Leap

A new method transmitting information from one atom to another can perhaps enhance the speed of computing. Physicists in the US and Austria for the first time have teleported "quantum states" between separate atoms, as reported in the Science News of the Los Angeles Times, 19th June 2004. This new technology could help lead to "quantum computing" technology that would make super fast computers. The report was based on two papers scheduled to be published in the 17th June 2004 edition (Thursday) of The Journal of Nature.

A team of scientists at the National Institute of Standards and Technology (NIST) in Boulder, Colorado and another team of researchers in Rainer Blatt of the University of Innsbruck in Austria have independently developed new systems to achieve the technology, capable of transmitting one atom's "Quantum State"—a complicated and various properties— to another atom in remote place. The breakthrough has led to an even closer state in developing the super fast quantum computer. Almost unlimited amount of computing can be operated in

parallel, revolutionizing the processes of all kinds of communication and cipher.

Quantum teleportation only transfers information, not matter. The process employs a bizarre effect called entanglement, which two atoms are interfered each other in a way two atoms are linked together although these two atoms are far apart without physically contacted. Once one of the two atoms is changed, the other will be affected. Two teams entangled two atoms using a third messenger atom to transfer the quantum state between them in order to transfer information between them. During experiments, over 75% of success rate has significantly exceeded the case without interference. *(Science and Technology Division/Taipei Economic and Cultural Office in Los Angeles)*

First Pocket PC Virus Emerges

Owners of handheld computers running the Windows CE (Pocket PC) operating system can no longer boast about security: the first virus made for these devices has just made its appearance. Researchers with Symantec Security Response said the virus, a so-called "back-door Trojan" called Backdoor.Bardor.A, affects Windows CE, the operating system for personal digital assistants made by Microsoft. Once installed, the back door allows full control of the handheld system when it is restarted, Symantec said. When the infected handheld is connected to the Internet, the virus sends the attacker the IP address of the handheld device. It then opens port 44299 and waits for further instructions from the attacker. The backdoor affects only those devices based on the ARM central processor, a high-speed chip popular in PDAs and other handheld devices because of its small size and low power requirements. So far, Symantec says, Backdoor.Bardor.A is a "level 1" threat, the lowest rating Symantec offers. The highest is 5. Still, the virus can allow a remote user to do so much damage to the handheld computer that Symantec security experts recommend that compromised systems be completely reinstalled, including all applications. Additionally, users should delete the file /Windows/StartUp/svchost.exe. "Backdoor server and Trojan horse programs often use enticing file names to trick users into executing them," Symantec's Oliver Friedrichs said in a statement. "Users should not open or execute files from unknown sources." *(Science and Technology Division/TECO-Chicago)*

IBM to Build Supercomputer for U.S. Army

NEW YORK (Reuters) - International Business Machines Corp. (IBM) said it had been selected to build a supercomputer for the U.S. Department of Defense that help develop advanced weapons for the army. The computer, code named "Stryker," will be deployed at the Army Research Laboratory Major Shared Resource Center in Aberdeen, Maryland, IBM said. IBM did not disclose the financial terms of the deal. The supercomputer consists of 1186 powerful IBM computers connected together with a total of about 2,300 64-bit microprocessors made by AMD. The supercomputer would run on the Linux operating system. This would be the largest Linux based supercomputer in the U.S. military, IBM said. The system will perform at a peak speed of 10 teraflops, or 10 trillion mathematical operations per second. That means the supercomputer will be able to accomplish in just one second what it would take a person with a calculator a few million years. IBM expects the computer to be ranked among the world's 20 fastest computers when the next list of the top 500 computers is released. The Top 500 list is compiled and published twice a year by Jack Dongarra of the University of Tennessee, Erich Strohmaier and Horst Simon of NERSC/Lawrence Berkeley National Laboratory and Hans Meuer of the University of Mannheim (Germany). The fastest computer, according to the most recent list, was the Earth Simulator Center in Japan made by NEC Corp. *(Science and Technology Division/TECO-Chicago)*

Science and Technology Research at the Australian National University

Research performance at The Australian National University (ANU) places it within a small number of the world’s very best universities. It has high concentrations of Australia’s best academics and researchers. The ANU has been ranked 49th in the world by the Shanghai Jiao Tong University Citation Index for 2003 and number one nationally in terms of its success in highly competitive research grant schemes. It hosts 15 of the 75 Australian Research Council Federation Fellows, leading Australian and international researchers who carry out research for the benefit of Australia and facilitate the formation of world-class research teams.

The ANU is characterised by a unique concentration of effort in the fundamental disciplines, the national recruitment of students, accessible infrastructure and ground breaking, cross-disciplinary collaborative links. In 2002, the University's total expenditure on R&D was $241.6 million. Of this total expenditure, 45.4% was spent on pure basic research, 28.4% was spent on strategic basic research, 20.7% was spent on applied research and 5.5% was spent on experimental development.

The research strengths of ANU are broad and cover the following areas: Asia-Pacific Studies; Astronomy; Australian Indigenous Studies; Biomedical Sciences; Business and Commerce; Chemical Sciences; Creative Arts; Earth Sciences; Economics; Environmental Research; Genes, Evolution and Ecology; Health Sciences; History and Archaeology; Human Society; Information Sciences and Engineering; Language, Culture and Literature; Law; Mathematical Sciences; Physical Sciences; Plant Sciences; Policy and Political Studies; and Psychology and Education.

There are many parallels between the research strengths of The ANU and the Science and Technology Taiwan National Program. Synergies exist in the fields of Hazard Mitigation, Telecommunications, Agricultural Biotechnology, Genomic Medicine, Digital Archives, Nanotechnology and e-Learning. The ANU welcomes collaborations between Australia and Taiwan on research projects of mutual interest. *(Science and Technology Division/Taipei Economic and Cultural Office in Australia)*

Acupuncture Shown to Relieve Post-Op Nausea-Study

A review of 26 trials involving more than 3,000 patients showed stimulating the pericardium, or P6, acupuncture point on the wrist reduces the nausea that affects about four out of five patients who have had anesthetics. "Acupuncture is a cheap and safe way of preventing people who have just had an operation from being sick or feeling nauseous," New Scientist magazine said. The review, which appears in The Cochrane Database of Systematic Reviews 2004, showed that patients who received P6 acupuncture were about 28 percent less likely to feel nauseous or be sick than those who received a placebo or sham treatment. Acupuncture, which involves inserting very fine needles into the skin at specific points in the body, was also shown to be just as good as routine anti-nausea drugs in head-to-head trials. It is one of the most popular forms of complementary medicine and has been shown to relieve headaches and migraine. The researchers who conducted the review -- Anna Lee, of the Chinese University of Hong Kong, and Mary Done, of New Children's Hospital in Sydney, Australia -- said the treatment is safe and effective and side effects are minimal. *(Science and Technology Division/TECO-Chicago)*

Experts at Your Fingertips

Natural Environment Research Council (NERC) has a new website (www.nerc.ac.uk/using/capability/) to help industry, policy makers and other NERC science users find research expertise. This site contains a database of research capabilities in the research centres. They are categorized by market sectors, as well as science categories. To find someone to help you with storing natural gas, you can go to natural resources and then to oil and gas, and you will find the expert to help you. The Commercial Team said, each capability has a contact for more information. We hope the site will lead to successful partnerships and research collaborations. For more information, visit the website or contact Siân Kitchener at skit@nerc.ac.uk *(Science & Technology Division, UK)*

Study: Ocean Absorbing Excess Carbon Dioxide

Carbon dioxide, produced by burning fossil fuels and other industrial processes, is one of the most important "greenhouse" gasses that many scientists fear may be causing global warming by trapping heat in the Earth's atmosphere. The atmosphere currently includes about 380 parts per million of carbon dioxide, up from 280 parts per million in 1800, according to scientists. But that accounts for only about half the CO2 released into the air in that period, causing researchers to speculate about what had happened to the rest.

A team led by Christopher L. Sabine of the National Oceanic and Atmospheric Administration, reports in Friday's issue of the journal Science that the missing gas is dissolved in the ocean. "The ocean has removed 48 percent of the CO2 we have released to the atmosphere from burning fossil fuels and cement manufacturing," Sabine said after reviewing data

gathered between 1989 and 1998 from three major studies of the Atlantic, Pacific and Indian oceans. The studies collected more than 72,000 ocean samples. Overall, Sabine said, between 1800 and 1994 the oceans absorbed 118 billion metric tons of carbon that had been released into the air. A metric ton is 2,205 pounds, indicating that during that period carbon dissolved in the oceans about equaled the weight of 118 billion small cars.

While some researchers have raised the possibility that increasing forests and other plants could take up CO2, that appears not to have been the case until recent years. Over the past two centuries, land plants appear to have contributed CO2 to the air as forests were cut for farming, Sabine said. Only in the last few decades, as reforestation has gotten under way, has that been reversed with plants taking in more carbon dioxide than they release. Taro Takahashi of Columbia University's Lamont-Daugherty Earth Observatory notes in an accompanying commentary in Science that over time, the amount of CO2 taken up by plants has been nearly balanced by CO2 released by changes in land use patterns. The oceans could continue absorbing the gas for centuries, Sabine said, because ocean waters mix slowly and most of the CO2 is in near-surface water.

An accompanying study by Richard A. Feely, also of NOAA's Pacific Marine Environmental Laboratory in Seattle, notes that dissolving CO2 in water forms an acid and that process can affect ocean life. Feely and his research team found in laboratory tests that the water near the ocean surface with added CO2 can cause shells of marine animals, including corals, snails and plankton, to dissolve. Carbon dioxide levels that may occur in the seas by the end of the century could reduce the amount of calcium in shells by 25 percent to 45 percent, the researchers said.

That process hasn't yet been studied in the oceans, he noted, but the lab findings indicate a need for concern. The increasing CO2 could "compromise the fitness or the success" of these animals, said Victoria J. Fabry of California State University at San Marcos. That might mean a change in the structure of the food chain, she said, but not enough is known about the effects yet to say what that change would be.

Data for the ocean CO2 study was collected in three research efforts: the National Science Foundation-led World Ocean Circulation Experiment, the Joint Global Ocean Flux Study, and NOAA's Ocean-Atmosphere Carbon Exchange Study. The data from these studies were analyzed for the two papers, by Sabine and Feely. Sabine and Feely worked together on the studies and each is listed as a co-author on the paper led by the other. Other researchers on their teams came from the United States, South Korea, Australia, Canada, Japan, Spain and Germany. Funding for the studies came from NOAA, National Science Foundation, Department of Energy and Pohang University of Science and Technology in South Korea. *(Science and Technology Division/TECO-Chicago)*

Scientist's Icy Warning for London

The Government's chief scientist Sir David King claimed level of the greenhouse gas carbon dioxide are at their highest for 55 million years- when there was no ice on the planet. "If the trend continued, floods could wipe out low-lying, on the edge of the sea cities such as London, New York and New Orleans," he told a group of scientists heading to the Antarctic to study climate change. Records show that greenhouse gas levels between the ice ages peaked at 270 ppm, and they are now 379ppm. *(Science & Technology Division, UK)*

Random Noise to Improve Weather Forecasts

Small-scale fluctuations, which are wide-spread in the atmosphere, may affect weather system more than previously thought, scientists at Oxford University have discovered. The fluctuations, known as inertia-gravity waves, are prominent in the bottom 15km of the atmosphere and show up as 'stripy' features in clouds. Meteorologists used a computer model of a simple fluid system simulating the atmosphere, and they found that the waves could affect the atmosphere. When the scientists sent random noise as the inertial-gravity waves through the system, it could behave differently. The fluid could spontaneously change to different states, such as dramatic shift in the patterns of low and high pressure. This suggests that inertia-gravity waves could cause significant errors in weather forecasts. More research is needed to find out how the forecasts would be affected in order to improve it. *(Science & Technology Division, UK)*

Test May Predict Menopause Date

Scientist from Scotland claimed a method which could predict when a woman will go through the menopause. Theoretically, human female ovary contains 800,000 immature eggs by birth, and the number declines continually. The number reaches around 25,000, usually at around the age of 37, then the decline accelerates more rapidly. By the time a woman is about to go through the menopause, this number will have fallen to around 1,000.

On average, a woman will go though the menopause aged around 50, but the deviation will be 7 to 8 years. The team created a model estimating the size of an 'average' woman's ovaries throughout her reproductive life. Use the model, it is possible to assess whether a woman is likely to have an earlier or later menopause, based on her ovarian size. This will be useful for women who are planning to delay having family, for professional or personal reasons. *(Science & Technology Division, UK)*

Passive Smoking Danger Doubles

Passive smoking is twice as deadly as previously thought, researchers said. The report showed that breathing in someone else's tobacco fumes increases the risk of heart disease by 60 per cent, as double as the previous studies, which was 30 per cent. The latest study involved following the health of 4,729 men from 18 British towns for 20years. It showed higher concentrations of cotinine – a by-product of nicotine – among the non-smokers could increase the risk of heart disease by between 50 and 60 per cent. Researcher Professor Peter Whincup, from St George's Hospital Medical School in London, said: 'This suggests the effect of passive smoking could have been underestimated in earlier studies.' The British Medical Association will call for smoking to be banned from workplace. *(Science & Technology Division, UK)*

NASA Plans to Put an Aura Around the Earth

When people search for conditions that might support life on other planets, one of the first things they look for is water. Right now, NASA is searching for signs of water on Mars as a precursor to whether life may have been possible there. But the thin sliver of gases and air that make an atmosphere around a planet is just as necessary for life to exist. The atmosphere traps air around our planet, making it possible to breathe and to have a climate. It also regulates the temperature within a range that allows life to exist, and our ozone layer blocks life-threatening ultraviolet radiation from the sun from reaching earth's surface. Earth's atmosphere sustains life in all these ways, and by the thinnest margins. If a person could cruise at a speed of 60 miles an hour straight up, it would take just 6 minutes to exit the air we need to survive. Considering the relatively delicacy of this thin protective film, understanding our atmosphere goes hand in hand with protecting life as we know it. On June 19, NASA will launch Aura, a next generation Earth-observing satellite that will make global observations of the ocean of air that surrounds our planet. Aura will supply the best information yet about the health of Earth's atmosphere.

Aura will provide an essential component for understanding changes in our climate, our air quality, and the ozone layer that protects life from harmful solar radiation. In doing so, it will help answer some fundamental questions regarding climate change. One question that researchers have asked is: Is the stratospheric ozone layer is recovering? International agreements, like the Montreal Protocol, have banned ozone destroying chemicals like Chlorofluorocarbons (CFCs), but scientists are unclear about the effectiveness of these treaties. Aura will accurately detect global levels of CFCs, and their byproducts, chlorine and bromine, which destroy the ozone layer. Another question that researchers need more information to: What are the processes controlling air quality? Aura will help greatly to unravel some of these mysteries by tracking the sources and processes controlling global and regional air quality. When ozone exists in the lower atmosphere, the troposphere, it acts as an air pollutant. Gasoline and diesel engines give off gases in the summer that create ozone and smog. Aura will help scientists follow the sources of ozone and its precursors. Finally, Aura will offer insights into the question: How is the Earth's climate changing? As the composition of Earth's atmosphere changes, so does its ability to absorb, reflect and retain solar energy. Greenhouse gases, including water vapor, trap heat in the atmosphere. Airborne aerosols from human and natural sources absorb or reflect solar energy based on color, shape, size, and substance. The impact of aerosols, tropospheric ozone and upper tropospheric

water vapor on Earth's climate remains largely unquantified, but now Aura will have the unique ability to monitor these agents.

By studying the atmosphere and its chemistry, Aura will complete the first series of NASA's Earth Observing System satellites. The other satellites are, Terra, which monitors land, and Aqua, which observes Earth's water cycle. The trio of satellites rounds out this coordinated effort to get a complete and detailed picture of factors that contribute to our dynamic climate system. Along with these other satellites, Aura will create an essential stepping stone to better understanding planets other than Earth as well. The mission will be on the cutting edge of the agency's legacy of ground-breaking exploration. "Gaining this global view of Earth will certainly reap new scientific discoveries that will serve as essential stepping stones to our further exploration of the Moon, Mars and beyond, the basis of the Vision for Space Exploration," NASA Administrator Sean O'Keefe said.

With the Aura mission, NASA will cap off a 15-year international effort to establish the world's most comprehensive Earth Observing System, whose overarching goal is to determine the extent, causes, and regional consequences of global change. The data from this satellite is expected to help organizations across the country better forecast air quality, ozone layer recovery, and climate changes that impact our health, our economy, and our environment. *(Science and Technology Division/TECO-Chicago)*

The Good, the Bad and the Ozone

Ozone is a big buzz word these days. We mostly hear about the ozone layer, and the importance of protecting it. But if you want to understand what ozone's all about, you need to understand that it can be good, and it can be bad.

The good kind of ozone: The stratosphere is the layer of the atmosphere from 10 to 30 miles above sea level. When there's ozone in this layer, it protects us from solar radiation. How? Simple chemistry. Regular oxygen molecules, known to science-types as O2, are made up of two oxygen atoms stuck together. Solar energy shoots in from space and splits that molecule into two atoms. When one of those stray atoms attaches to a full-fledged O2 molecule, you've got, well, O3, otherwise known as ozone. All that action blocks solar radiation, and keeps it from reaching us.

How can solar radiation be harmful to life on Earth? Part of that radiation is ultra-violet, or UV radiation. It's an intense energy from the Sun that can cause a whole lot of damage. Skin cancer is the most dramatic result of a too much UV radiation, but there's a lot more too. Photosynthesis in plants is also affected, and that causes problems for the whole food chain. See where this is headed? We need to protect our ozone shield, and we can do so by decreasing the pollution that our industrial society puts out in large amounts every day.

The bad kind of ozone: Let's come down a little closer to Earth. The troposphere is everything below the stratosphere, from sea level to about 10 miles above. It's where everything lives. Things that happen to the troposphere happen to us; there's nothing indirect about it. Put a little ozone in the troposphere and you've got some big problems. Remember those dramatic chemical reactions that happened up in the stratosphere? Living things are made of atoms and molecules too, so when we expose them to ozone, we've got some serious chemical reactions on our hands. In humans, it means lung damage. Small children and people with asthma are especially at risk. How can you help solve the problem? Cars, trucks and SUVs are the biggest contributor to this ozone buildup. Engine exhaust creates nitrogen dioxide, so the more you drive, the more your vehicle creates. High gas prices aren't the only reason to leave the car in the garage. *(Science and Technology Division/TECO-Chicago)*

Sci-Tech Brief

Cassini Spacecraft Has Uncovered Two New Saturnian Moons

Cassini spacecraft has uncovered two moons, which may be the smallest bodies so far seen around the ringed planet. The moons are smaller than the city of Boulder, Colorado. The moons, located 194,000 kilometers (120,000 miles) and 211,000 kilometers (131,000 miles) from the planet's center, are between the orbits of two other saturnian moons, Mimas and Enceladus.

Cassini The moons were first seen by Dr. Sebastien Charnoz, a planetary dynamicist working with Dr. Andre Brahic, imaging team member at the University of Paris. "Discovering these faint satellites was an exciting experience, especially the feeling of being the first person to see a new body of our solar system," said Charnoz. "I had looked for such objects for weeks while at my office in Paris, but it was only once on holiday, using my laptop, that my code eventually detected them. This tells me I should take more holidays."

Moons surrounding the giant planets generally are not found where they originally formed because tidal forces from the planet can cause them to drift from their original locations.

The Cassini-Huygens mission is a cooperative project of NASA, the European Space Agency and the Italian Space Agency. The Jet Propulsion Laboratory, a division of the California Institute of Technology in Pasadena, manages the Cassini-Huygens mission for NASA's Science Mission Directorate, Washington, D.C. The Cassini orbiter and its two onboard cameras were designed, developed and assembled at JPL. For images and information about the Cassini-Huygens mission, visit http://saturn.jpl.nasa.gov and http://www.nasa.gov/cassini. *(Science and Technology Division/ TECO-Chicago)*

Flame Retardants Found in Farmed Salmon

A study published in the recent journal Environmental Science and Technology shows that farmed salmon accumulates higher levels of polybrominated diphenyl ethers (PBDEs,). PBDEs is a flame retardants which are similar to polychlorinated biphenyls (PCBs), another toxic chemical contaminant found in high levels in farmed salmon. Flame retardants are generally used in furniture and electrical equipment.

Flame retardants have been shown to cause developmental problems in laboratory animals and the levels of these chemicals found in human blood are on the rise. Flame retardants have come under increased scrutiny as their level in human blood has doubled over the past 5 years. In laboratory studies, flame retardants have been shown to impair development of young rats and rat fetuses and to disrupt their hormone systems, but there have been no similar studies in humans.

Some types of flame retardants have been banned in Europe because of health concerns. California will start to ban two types of flame retardants in 2008. *(Science and Technology Division/TECO-Chicago)*

Argonne Recycling Wins State Recognition

In 1993, Argonne National Laboratory's Illinois site disposed of almost 3,700 metric tons of sanitary waste. In 2003, because of recycling and reuse efforts, that amount was down to just 36 metric tons. In recognition of this and other effective pollution controls, Argonne was presented the 2004 state award for outstanding Government Leadership in recycling.

The award was sponsored by the Illinois Environmental Protection Agency, in conjunction with the Illinois Recycling Association.

Barbara Markwenas, Argonne's pollution prevention coordinator, said the award was well deserved. We've dramatically decreased the amount of waste we have to get rid of, she said. Since the initiatives began in 1996, we've saved about $12 million, we don't have to pay as much to send trash to landfills, and by reusing materials we buy less.

The strongest impetus for Argonne's recycling efforts was a 1996 government mandate that each U.S. Department of Energy facility reduce its regulated waste streams. For example, the government called for a 50 percent reduction in sanitary (non-hazardous) waste by 2005.

We've already surpassed that, we're at 77 percent, said Markwenas. Sanitary waste includes paper, toner cartridges, scrap metal and even asphalt and concrete. She said Argonne not only reduces, recycles and reuses, but also resells items such as metal and rubber for added revenue.

Michael Mitchell, executive director of the Illinois Recycling Association, said Argonne 's 77 percent reduction in sanitary waste was remarkable. State regulations dictate 33 percent recycling or better. Anything over 50 percent is extremely impressive.

Markwenas suggested that Argonne 's success was due to a culture of cooperation. Upper management provided immediate support, she said, and quarterly advisory meetings allowed the laboratory's Pollution Prevention Program to get the word out.

Markwenas said by recycling and reusing raw materials, we can find cost savings without sacrificing efficiency. She said it's not surprising that Argonne groups have been so receptive to the pollution prevention message. You're generating less waste, saving money on disposal, and helping the environment. Why wouldn't employees want to be on board, she asked.

The nation's first national laboratory, Argonne National Laboratory conducts basic and applied scientific research across a wide spectrum of disciplines, ranging from high-energy physics to climatology and biotechnology. Since 1990, Argonne has worked with more than 600 companies and numerous federal agencies and other organizations to help advance America's scientific leadership and prepare the nation for the future. Argonne is operated by the University of Chicago for the U.S. Department of Energy's Office of Science. *(Science and Technology Division/TECO-Chicago)*

Donation Benefits Alzheimer's Research Center at UTMB

George Mitchell, a wealthy Houston oilman/developer and a Galveston native whose wife Cynthia suffers from Alzheimer's disease, has donated $2.5 million to the University of Texas Medical Branch (UTMB) as part of the funding to launch an Alzheimer's Research Center named after the Houston couple.

"We believe Alzheimer's is a disease for which a cure can be found, and our researchers will be in the forefront of national efforts to stop this scourge," said UTMB President Dr. John Stobo in a written statement. "We want to position UTMB to provide top-notch treatment for the senior citizens in our own community who fall victim to Alzheimer's as well as to people across the state and nation who are afflicted by the disease," Stobo said. However, the focus will be placed not only on Alzheimer's but also on similar degenerative neurological disorders such as Parkinson's disease. One of the lead researchers and a former researcher at New York University Medical Center, Dr. Claudio Soto who served as a scientific adviser to Serono International SA, joined UTMB at the end of 2003. Dr. Soto's current research centers on deformed proteins in the brain that, over time, change shape and form clumps and deposits in the brain. This phenomenon in turn induces degeneration and is likely the cause of many diseases including Alzheimer's. Since there is still no early diagnosis for diseases such as Alzheimer's or Parkinson's, Dr. Soto hopes to find a way in identifying Alzheimer's years before symptoms appea *(Science and Technology Division/Taipei Economic and Cultural Office in Houston)*

Digital Video Recording: Police Force's Newest Tivo-Like Gadget

After months of testing, the Tyler Police Department in east Texas decided to arm its sixty patrol cars with the newest gadget—a TiVo-like digital video system developed by Coban Research and Technologies Inc., a small private company in the greater Houston area founded by Dr. Hongchang Chang of Taiwan, and distributed by IBM's Global Services division. Video Mobil Data Terminal (VMDT) is a "all-in-one" system with reporting, communicating, computing functionality and a video recorder that takes stream video continuously while the patrol is on duty and saves the most current 30 seconds on the temporary memory. When an officer activates the recoding function, VMDT saves the video, along with the 30-second "pre-event." "Now that I've got them on video, I figure, `Let's go to court, I'd be happy to play them for you,' " Tyler police officer John Weavers said.

Indexed data from other peripherals such as speed radar readings, light bar status, microphone initiation, driver's license, or even GPS coordinates is logged and tagged into the video when it is transferred to the storage. Police now don't have to wade through hours of videotapes to find an incident. Other features included in VMDT are Smart Audio for additional protection, easy touch screen playback, a panic button for an officer in extreme danger, etc. Police in Yakima, Washington, one of the seven police departments, were the first to install VMDT on marked patrol cars. They say digital is superior to analog videotapes in many ways. It's cost-effective, more likely to catch law-breakers in the act with added protection of officers from lawsuits as well as citizens from unfair

and abusive treatment. *(Science and Technology Division/Taipei Economic and Cultural Office in Houston)*

MESSENGER's Mission to Mercury

The pioneering Mercury surface, space environment, geochemistry, and ranging MESSENGER mission will orbit the mysterious terrestrial planet, looking closely at its barren, pockmarked surface, its crust, its atmosphere, and its magnetic field. This is the first mission to Mercury since 1975. Messenger will be launched on August 2 in Florida. Messenger is equipped with a solar shield, to protect it from the intense heat the Sun during its mission.

Loaded with seven advanced scientific instruments and one radio science experiment to pack in as much science as possible, three scientific instruments were specially designed to study Mercury's surface.

Mercury gets as close as 57 million miles from Earth, but MESSENGER's mission profile calls for the spacecraft to travel nearly five billion miles to get there. MESSENGER isn't traveling all that distance just to get a good look at Mercury's topography. Three instruments will rely on a process called spectroscopy to tell scientists what elements are present in the rocks and minerals around the planet.

The spacecraft is scheduled to enter Mercury orbit in March 2011. No doubt, the findings will amaze and excite the NASA science team during the one Earth year that it will take to open the planet's doors for investigation.

But what gases might be present in Mercury's atmosphere? The Mercury Atmospheric and Surface Composition Spectrometer (MASCS) will be able to determine this and also detect minerals on the surface. The instrument is extremely sensitive to light from the infrared to the ultraviolet.

MESSENGER's advanced scientific instruments will shed light on how a terrestrial planet evolves, telling us more about our planet's own past. Whether Mercury is ready or not, the mission will give us a new look at our least-explored terrestrial neighbor, from the inside out.

MESSENGER will fly by Earth, Venus and Mercury several times to burn off energy before making its final approach to the inner planet on March 18, 2011. For further information, visit: NASA's MESSENGER Web Site *(Science and Technology Division/TECO-Chicago)*

Lecture - Trends in Global Fisheries

Daniel Pauly, one of the 50 most influential scientists in the world according to Scientific American, is a world authority on declining fish sticks, and how they respond to environment pressures, ecosystem fluctuations and commercial fishing. He has suggested that current fishing patterns will leave little but jellyfish and plankton for future generations to eat, and argues that the only solution is to abolish government subsidies to fishing fleets and establish marine reserves to allow fisheries to recover. Without a whole change in the way we fish, we will lose most of the species for ever. For information about the lecture please contact the Royal Society. *(Science & Technology Division, UK)*

Rebalancing in Photonics and Electronics

Following the 2000 review of photonics, a single Photonics Panel has been successful in bringing together proposals from the varies communities and making good relationships between the groups. However, there was some concern about potential imbalance between success rate for materials-based and device-based proposals. The material-based proposals have gained higher ranking than the device-based ones have. The net effect is to create a potential imbalance in overall funding of photonics research and electronics research. The new procedure is to run parallel lists for materials- and device-based proposals in a single panel. It is hoped to address the issue of imbalance. The process will be reviewed in early 2005, after two or three meetings of the photonics and electronics panel. *(Science & Technology Division, UK)*

Orld Class Brain Research Centre to Open in Wales

UK Science and Innovation Minister Lord Sainsbury has announced a ? 12 million grant to build a new research centre in Wales to benefit people with brain damage and psychological disorders. The

Cardiff University Brain and Repair Imaging Centre will be the first in the UK to combine two cutting edge scanning systems in order to acquire insight into the functioning of the brain. It is hoped that research carried out in the centre will lead to better treatments for conditions such as strokes, multiple sclerosis, and Alzheimer's disease, and for patient wirh schizophrenia. The grant will mainly be used on the functional magnetic resonance imaging (fMRI) and magneto encephalography (MEG) technology equipment. "Although fMRI is the preferred technique in locating brain process involved tasks, integrating fMRI with the millisecond precision of MEG will enable us to examine and understand the many discrete brain process involved," explained Professor Peter Halligan, the project director at Cardiff University. *(Science & Technology Division, UK)*

New UK Centre of Excellence to Tackle Incurable Diseases

Cambridge University has announced that it will open a world's largest centre for human embryonic stem cell research that will develop treatment for a range of currently incurable diseases with a budget of 16.5 million GBP. The UK's decision follows the establishment of a national stem cell bank. The future director of the centre, Professor Roger Pedersen said the co-ordinated effort makes UK the leading country. Research on stem cells is likely to lead to innovative cell transplantation therapies and a greater understanding of the regenerative capacity of the body. Juvenile diabetes and Parkinson's diseases will be the centre's first disease targets. The new centre will eventually house up to 150 scientists. *(Science & Technology Division, UK)*

Ireland Highlights the Positive in EU Presidency Report

In newly published report on their six month Presidency of the European Union, the Irish government has highlighted its achievements in the area of competitiveness and growth. Progress has been made on developing the European Research Area (ERA) since January, and the key achievements include the creation of Trans-European Networks (TENs) in transport and energy, the Galileo satellite navigation project, new measures to promote entrepreneurship, and the introduction of the environmental technologies action plan. The report writers believe the mid-term review of the Lisbon agenda will provide an opportunity to assess how well reforms are being delivered. To read the full report, please consult the web address: http://www.eu3004.ie/templates/document_file.asp?id=20717 *(Science & Technology Division, UK)*

Shigellosis in Sudan

People of Darfur, Sudan face high levels of disease and death, prevention is possible if efforts are intensified, coordinated and adequately funded, says head of the World Health Organization (WHO)

Recently, an outbreak of Shigellosis has been detected through the Early Warning System set up by WHO in North Darfur in the Abu Shoak Internally Displaced Persons (IDP) camp, covering a population of approximately 40,000 people at the end of June. The outbreak started in the middle of May.

As of 30 June, 1340 cases of bloody diarrhea with 11 deaths were notified by WHO's partners, including UNICEF, the International Committee of the Red Cross, International Federation of Red Cross and Red Crescent Societies and Médecins sans Frontières . Of the 13 stool samples laboratory tested on 30 June, 3 were positive for Shigella dysenteriae type 1.

WHO has provided assistance for laboratory diagnosis and has trained staff for the treatment of cholera and epidemic diarrhea.

Increased funds, people and supplies are critical now in the Darfur region of Sudan to prevent a major health catastrophe. Cholera, dysentery, and malaria threaten the survival of hundreds of thousands of internally displaced people. However, risks to people's health can be reduced through effective health interventions within an intensified relief program.

This was the conclusion of two top leaders of the World Health Organization as they wrapped up a mission to camps and hospitals in South and West Darfur.

"People are dying now because they are living in totally unsatisfactory conditions, but too many more could die in the coming weeks unless we prevent the lack of sanitation, malnutrition, shortage of clean water and the coming rains from combining into a recipe for death," said Dr LEE Jong-wook, WHO Director-General, as he finished his mission into areas of South and West Darfur. "We must work urgently to prevent a health catastrophe." *(Science and Technology Division/TECO in Chicago)*

New Illinois Law Permits Organ Donors with H.I.V.

Governor Rod R. Blagojevich of Illinois signed a bill on Thursday allowing people who are H.I.V. positive to donate organs to others infected with H.I.V., a provision that he called the first of its kind in the United States.

State Representative Larry McKeon, the Chicago Democrat who wrote the bill, said the decision was certain to save the lives of people with H.I.V., the virus that causes AIDS, who are waiting for liver transplants but have always been barred, as is everyone, from receiving donations from those with the virus. Mr. McKeon, 60, is himself H.I.V. positive and said he had been for 15 years or more. He said he was proud now to check off the box on the back of his Illinois driver's license, agreeing to become something he had not been allowed to be: an organ donor.

Some doctors and advocates for people with AIDS said the move by Illinois was certain to prompt similar actions in other states - and perhaps even a national shift in the rules that bar people with H.I.V. from becoming donors, despite what these advocates describe as the perfectly safe option of donating organs to other infected people. But federal authorities raised questions about the Illinois law, and said that any move to allow H.I.V.-positive organ donors would violate provisions of the National Organ Transplant Act of 1984.

"The federal law specifically states that no organs can be donated by those with H.I.V.," said Kevin Ropp, a spokesman for the Health Resources and Services Administration, part of the Department of Health and Human Services. "The purpose was to prevent the spread of H.I.V. and AIDS."

Lawyers for Mr. Blagojevich, however, said they had interpreted the federal organ donation procedures differently and believed Illinois could proceed as planned with its law, which went into effect as soon as it was signed on Thursday, said Abby Ottenhoff, a spokeswoman for the governor.

Dr. Robert Murphy, a professor of infectious diseases at Northwestern University, said he believed that the transfer of organs from on H.I.V.-positive person to another was safe. But, he said, doctors must be extremely careful and fully aware of their patients' medical treatments and histories.

But Dr. Robert Harland, a transplant surgeon at the University of Chicago, said that the practice was untested and that it might be possible for an H.I.V.-positive person to be infected with a different strain of the virus during an organ transplant. "This is in its infancy," Dr. Harland said. "It's totally unknown at this point in time." *(Science and Technology Division/ TECO in Chicago)*

2004 MICRONORA Trade Show to be Held in Besançon, France

The event, MICRONORA Trade Show, will be held in Great Eastern France, Besançon, from September 30 to October 1, 2004.

It aims to call together experts from industries (SMEs and large companies), laboratories, and technical centres, especially those who are seeking for technology innovation and experience; work in collaboration to sew up technical problems, develop new products, or establish new industrial processes.

The participants are allowed to
-make contacts with possible partners from Europe and Eastern European countries.
-approach potential users of a technique or a product
-find out the latest technology development trends and research activities
-increase the opportunity of international business

To register: Users may sign up for the event on the website http://www.euro-innivation.org/english/events.htm. Registration will take effect only after payment of registration fees is received by the host organization.

(Service Scientifique/Bureau de Representation de Taipei en France)

The 3rd International Conference on Paleoceanography to Be Held in Biarritz, France

The 3rd International Conference on Paleoceanography will be held in Biarritz, France from September 5 to 10, 2004. Five themes have been chosen to be the focal points of this conference:

- Cenozioic-Mesozoic oceans
- The carbonate and silica systems of the Pleistocene ocean
- Biogeochemical cycles of the past
- High frequency climate variability
- Interhemispheric ocean-climate linkages

The conference has been jointly organized by the "Environment and Paleoeanography Lab" of National Science Research Center, France (EPOC UMR-CNRS 5805), and the Université Bordeaux, which is the largest university in the city of Bordeaux. For more details on the conference, please visit the following website: http://www.icp8.cnrs.fr/index.html. The website of "Environment and Paleoeanography Lab" of National Science Research Center (EPOC UMR-CNRS 5805) is as followed: http://www.epoc.u-bordeaux.fr/ *(Service Scientifique/Bureau de Representation de Taipei en France)*

FDA Test Results of Prescription Drugs from Bogus Canadian Website Show All Products Are Fake and Substandard

A Food and Drug Administration (FDA) analysis of three commonly prescribed drugs purchased from a Web site advertised as Canadian showed that so-called "Canadian Generics" bought from the Web site were fake, substandard and potentially dangerous. One was a controlled substance. In light of these findings, FDA reiterates its strong concerns about purchasing prescription drugs online from unknown sources.

FDA investigators recently purchased three commonly prescribed drugs from a Web site advertising "Canadian Generics," which had been sending "spam" emails promoting its products. The products purchased were so-called "generic" versions of Viagra, Lipitor, and Ambien. None of the three products has a U.S.-approved generic version, and so all three drugs were unapproved.

"The test results of our analyses offer proof positive that buying prescription drugs online from unknown foreign sources can be a risky business. As was the case here, even where a website looks legitimate, FDA has clear evidence that the Web site is dispensing misbranded drugs that are not the same quality as those approved by the FDA for sale in the United States.

FDA continues to advise patients and consumers that they must use great care when purchasing prescription drugs online. The FDA's test results are summarized in a chart that can be accessed at: http://www.fda.gov/importeddrugs/chart071304.html. *(Science & Technology Division/TECO in Chicago)*

FDA Alerts Consumers Not to Feed Infants Chinese Infant Formula

The Food and Drug Administration (FDA) is warning consumers not to feed their infants infant formula from China because the safety and nutritional adequacy of infant formula from China is unknown. Recently, infant formula from China by the name of Guan Wei Yuan was found for sale in an Asian retail market in New York.

The federal law requires that any infant formula marketed in the U.S. must be registered with the FDA at least 90 days before marketing. Manufacturers are required to provide assurances that they are following good manufacturing practices and quality control procedures and that the formula will allow infants to thrive. Such assurances have not been provided for any infant formulas from China. Therefore, the agency is warning consumers that the safety and nutritional adequacy of infant formula from China is unknown.

To date, FDA is not aware of any illnesses or injuries associated with Chinese infant formula, Guan Wei Yuan. However, the analysis of certain Guan Wei Yuan powdered formulas by the New York State Department of Agriculture and Markets food laboratory found the formula to contain less than 1/7 of the federally required minimal amount of protein per serving, approximately 1/4 the required amount of fat and only minute amounts of declared calcium and

magnesium. There is no guarantee that this product, as a potential sole source of nutrition, would provide adequate nutrients for an infant. Consumption by infants, under conditions of use described on the label and labeling, could result in outcomes including severe illness or death.

FDA will continue to investigate and work with New York State Department of Agriculture and Markets and alert other states of the findings.

Consumers are advised to report any adverse reactions related to infant formula immediately to your health care provider as well as the FDA and state and local agencies. *(Science & Technology Division/ TECO in Chicago)*

Anti-Terror Patents Pile Up

Since September 11, 2001, the U.S. Patent and Trademark Office has received at least 300 applications for devices designed to win the war on terrorism. “Historically, when there is a cataclysmic event, there is a surge in inventor response,” says Richard Maulsby, public affairs officer at the agency. Among the newly minted patents is Boeing’s “intruder-proof flight deck door,” which secures an airplane’s cockpit from the cabin.

But behemoth companies aren’t the only ones procuring patents to guard the homeland. “Plenty of independent inventors redirected their energies to anti-terrorism inventions after 9/11, says Andy Gibbs, CEO of Patent-Café, a developer of intellectual-property-management software. “Many now have patents to show for that.” Refrigeration technician cum inventor John R. Cunningham of Marathon, Florida, is now the proud holder of patent #6,646,270 for a germicidal mailbox that uses ultraviolet light to decontaminate rogue bills and junk mail. Jack Chen of Taipei Taiwan developed “Flying Airbag Jumpsuit” for slowly and safely descending from a high-rise building. Creative, sure, but will it woo commercial interest? Probably not. Just because you have an anti-terrorism patent doesn’t mean you have an anti-terrorism product--not by a long shot,” Gibbs says. Which would-be Edisons, if any, will make it big? Below, we evaluate a few contenders and their freshly patented anti-terror gadgets. *(Science & Technology Division/TECO in Chicago)*

Sci-Tech Policies

University of Texas Granted to Establish Alzheimer's Disease Research Center

University of Texas Medical Branch (UTMB) at Galveston has lately received a research fund for establishing the Alzhemer's Disease Research Center that endeavors to search for the treatments of Alzhemer's disease. UTMB President John D. Stobo showed that the research center will make great efforts to combat the disease and other degenerative neurological conditions such as Parkinson's disease. It is believed that the cure will be discovered eventually.

Presently physicians are unable to detect the neurological disorders at early stages. Dr. Soto, expert of Alzhemer's disease at UTMB, indicated that the Research Center will devote professionals in the hope of recognizing the related symptoms at initials years of the disease to prevent from pathological changes of the brain.

$2.5 million of the research fund is a gift from Cynthia and George Mitchell Foundation. George P. Mitchell, an oilman from Galveston, whose wife Cynthia is also Alzehemer's disease patient, wishes that such grant will help on the innovation and research works in finding the treatment and repair the damages. The elderly victims of neurological disorders are increasing its numbers in the United States. Once the remedy was found by Galveston's Research Center, it will not only benefit to local patients but also help numerous sufferers across the nation. *(Science and Technology Division/Taipei Economic and Cultural Office in Houston)*

Embryo Licensing Regime Should Be Lift

Simple research on human embryos, such as traditional work on in-vitro fertilization, should not use the same licensing regulations as newer work such as cloning, leading embryologists pointed recently. All research projects using embryos in the UK require a license from the Human Fertilisation and Embryology Authority (HFEA). But the laws governing embryo research are over a decade old, and changes to the process of ethical approval and clinical research governance have made HFEA licensing process redundant for routine research. British

Fertility Society (BFS) speaker said that ethics approval is organised on a national basis, and NHS trusts and universities now have a duty to establish research governance framework to cover this type of research. *(Science & Technology Division, UK)*

Amendments to Tissue Bill Ease Research Use

Amendments to the Human Tissue Bill will ensure research using human tissue is not regulated out of existence. James Underwood, president of the Royal College of Pathology (RCP) said that the amendments deal with concerns that they had with the Human Tissue Bill, especially for research. Under the new wording, research which would proceed with human tissue must be agreed by an ethics committee, and the data must be anonymised. Mark Walport, director of the Wellcome Trust, was delighted that the amendments have balance between protecting the rights and confidentiality of patients and their families, and the need to safeguard research. Meanwhile, questions remain over the legality of performing DNA analysis without proper consent. *(Science & Technology Division, UK)*

The Next 10 Years for UK Science

Earlier this year, the UK Government announced that a ten-year investment framework for science and innovator will be published this summer. The Royal Society submitted its response to the Treasury's consultation in May. The Society has recommended that the framework should concentrate on achieving the capacity and flexibility, and developing future opportunities both foreseeable and unforeseeable, rather than try to prioritise specific areas of research. Lord May of Oxford, President of the Royal Society spoke on the day of the submission that highlight the worrying signs that the supply of talented individuals may be faltering with huge falls in A-level entrants for physics, chemistry and mathematics. Besides, how to retain students in science and engineering beyond university degrees, attract the best postdoctoral researchers from abroad and have a clear vision of the future development of science across the EU were all in the recommendations to the Government. *(Science & Technology Division, UK)*

Conferences and Events

LSU Professor Wins the Latest Pan Wen-Yuan Research Award

Taiwan's Pan Wen-Yuan Foundation recently announced its 2004 Research Award winner. This year's award goes to Dr. Peter Chen, nominated by the Science and Technology Division of Houston, of Louisiana State University where he has held the position of M. J. Foster Distinguished Chair Professor of Computer Science since 1983. Dr. Chen, who will receive half a million Taiwan Dollars, is scheduled to attend the ceremony late August in Taiwan.

Since 1997, this award has been given to three recipients each year who had shown outstanding achievement in the fields of electronics, semi-conductors, telecommunications, computer science, computer hardware/software, IT, and IS. One of the rudimentary criteria, however, requires that recipients be of Chinese descent.

Dr. Chen is the inventor of Entity-Relationship Model (ER Model), which has been integrated by many organizations and companies into their system analysis and database design, computer-aided software engineering tools, and repository systems such as IBM's Repository Manager/MVS and DEC's CDD/Plus. Earlier this year, Dr. Chen was awarded funding of $1.8 million from the National Science Foundation for the development of a high-tech security system which effectively decreases the time spent tracking down criminals. Dr. Chen, a graduate of the National Taiwan University in 1968, received his doctoral degree in computer science from Harvard in 1973. *(Science and Technology Division/Taipei Economic and Cultural Office in Houston)*