NEWS HAPPENING IN THE MID-ATLANTIC REGION
--- A Snapshot of the Continuum ---
(Following are abstracts from longer articles)

NEWS FROM THE FEDERAL LABS

Army, DOE Combine R&D Efforts
Aberdeen Proving Ground News, 07/12/07, V.51, #28, p. 1
http://apgnews.apg.army.mil/archive/pdf2007/july1207/july1207_1.pdf
Story by:LARRY D. MCCASKILL, RDECOM
The U.S. Army Research, Development and Engineering Command recently established an expanded cooperative research and development program with the U.S. Department of Energy. The initiative's goal is for the organizations to work jointly on identifying and developing advanced technologies to meet the needs of the current and future force to confront a range of threats around the world. RDECOM and its headquarters, the U.S. Army Materiel Command, have worked with DOE's national labs on selected programs and this agreement expands the effort.

Under the terms of the MOA, the participating organizations agree to share information and strategies for developing and testing new technologies in survivability, lethality, power and energy and other areas critical to military operations. The MOA established a comprehensive, systematic exchange of technical requirements and sharing of information on advanced technologies of interest to both the Army and DOE.

Neurotechnology Industry Organization (NIO)
http://www.neurotechindustry.org/
Still in its infancy, the Neurotechnology Industry Organization (NIO) is a non-profit trade association formed in late 2006, that represents companies involved in neuroscience (neuropharmaceuticals, cell-based therapeutics, neurodevices and neurodiagnostics), academic neuroscience research centers, and brain-illness advocacy groups across the United States and throughout the world.

NIO was formed to provide a unified voice for the commercial neuroscience community. NIO advocates for its member organizations on a range of issues related to neurotechnology research and business development including favorable changes in the tax code, intellectual property issues, neuroethics, public policy, reimbursement and patient advocacy. NIO is technology inclusive and indication centric trade association. Unlike the very large trade associations which focus on broad themes, NIO focuses specifically on policy reforms that are necessary to create cost efficiencies, clarity and certainty in the CNS regulatory processes as well as neurotech company's funding needs from both private and public sectors. NIO fills the needs of neurotech organizations that were going unmet. NIO serves as an umbrella organization for all the stakeholders involved in neurotechnology, unifying previously fragmented voices.

DARPA and NIST Evaluate Military Translation Computers
Information Week, July 25, 2007
http://www.informationweek.com/story/showArticle.jhtml?articleID=201200790&cid=RSSfeed_IWK_News; www.first.org/newsroom/globalsecurity/132351.html
It's tough for military personnel to tell if a civilian has bad or good intentions if they don't speak the same language. So, as several technology companies work to improve translation software, the National Institute of Standards and Technology also is doing its part. NIST announced that its researchers are evaluating instant two-way translation systems for the Spoken Language Communication and Translation System for Tactical Use (Transtac) at the Defense Advanced Research Projects Agency.

NIST, UMBI To Expand Cooperation in Bioresearch

http://www.nist.gov/public_affairs/techbeat/tbx2007_0810umbi.htm
Officials from the National Institute of Standards and Technology (NIST) and the University of Maryland Biotechnology Institute (UMBI) today signed a Memorandum of Understanding designed to expand significantly the scope of joint research and educational activities in the biosciences between the two institutions.

The new MOU updates an existing relationship between NIST's Chemical Science and Technology Laboratory and the University of Maryland that dates back to 1985, when they joined with Montgomery County, Md., to establish the Center for Advanced Research in Biotechnology (CARB), a joint research venture emphasizing work on the relationship between structure and function in biomolecules and the development of new technologies for the measurement, analysis and design of biomolecules.

Under the new agreement, the scope of the long-standing relationship will be broadened to include all four research centers under UMBI and all research laboratories at NIST. The MOU, which provides a general framework for future joint activities, allows for

- interdisciplinary research programs that leverage NIST's measurement and analysis expertise across the range of physical sciences with UMBI's resources;
- broadening access to the specialized research facilities of both institutions;
- increased exchange of staff though temporary appointments; and
- training programs for high school, undergraduate and graduate students, postdoctoral and visiting scientists, and interns that capitalizes on the unique expertise and facilities at UMBI and NIST.

In addtion to CARB in Rockville, Md., the UMBI system includes the Center for Biosystems Research (College Park, Md.), the Center of Marine Biotechnology (Baltimore, Md.) and the Medical Biotechnology Center (Baltimore, Md.). NIST facilities include the NIST Center for Neutron Research, the Advanced Chemical Sciences Laboratory, and the Advanced Measurement Laboratory, in Gaithersburg, Md., and the Hollings Marine Laboratory in Charleston, S.C.

Naval Research Lab Works a CRADA on Methane Gas Hydrate Formation
www.nrl.navy.mil/techtransfer/cradas.php
Non-Navy Parties**:** Monterey Bay Aquarium Research Institute (MBARI) and Schlumberger Doll Research
NRL Program Manager**:** Dr. James Yesinowski, Chemistry Division

Gas hydrates containing primarily methane which occur in large quantities in marine sediments, are attracting increasing attention as a potential energy resource, for their effects on sediment stability and related safety issues, and for their potential impact upon the Earth's climate. This CRADA combines MBARI's expertise in performing deep-sea experiments using remotely operated submersible vehicles (ROV), Schlumberger's proprietary knowledge in the rapid quantitation of nuclear magnetic resonance (NMR) signals from liquids, such as seawater, external to the device, and NRL's expertise in the low-temperature, high-field NMR characterization of complex materials. The objective of the CRADA is to explore a fundamentally new approach using NMR to investigate gas hydrate formation over long duration in the deep-sea environment.

Join the DOT Federal Highway Administration's Knowledge Exchange
www.fhwa.dot.gov
FHWA is sponsoring web-based communities of practice (CoP's) to promote free and open knowledge exchange on such topics as environment and planning, air quality, high performance concrete, and transportation asset management. Join a group of your peers throughout the highway community to discuss, collaborate, and exchange ideas and practices on a wide range of interesting and timely topics on one of the FHWA Knowledge Communities.

NASA Scientists Can Warn of Famine
Published: Jul 23, 2007, by Staff
www.postchronicle.com/news/science/article_21293696.shtml
NASA researcher Molly Brown and colleagues have developed a computer model that can predict food shortages caused by droughts. The scientists at the National Aeronautics and Space Administration's

Goddard Space Flight Center created the model using data from satellite remote sensing of crop growth and food prices. Brown said the technology could assist governments and humanitarian aid officials in planning and responding to drought-induced food price increases. Brown said that until now officials have primarily studied the after effects of occurrences such as floods or droughts that might affect crop production as the best means of warning of a coming food security crisis.

"With this new study, for the first time we can leverage satellite observations of crop production to create a more accurate price model that will help humanitarian aid organizations and other decision makers predict how much food will be available and what its cost will be as a result," said Brown. "This is a unique opportunity for an economic model to take climate variables into account in a way that can aid populations large and small."

Ten Most Recently Posted Available Patents at the National Energy Technology Lab
See list of dozens of energy-related, available patents at
www.netl.doe.gov/business/patents/active_patents.html#Active

7,159,841	Piezoelectric axial flow microvalve
7,096,722	Method and Apparatus for Detecting Combustion Instability in Continuous Combustion Systems
7,033,419	Method for High Temperature Mercury Capture From Gas Streams
7,007,474	Energy recovery during expansion of compressed gas using power plant low-quality heat sources
6,994,930	Direct Fired Reciprocating Engine and Bottoming High Temperature Fuel Cell Hybrid
6,959,589	Ultrasound Analysis of Slurries
6,908,497	Solid sorbents for removal of carbon dioxide from gas streams at low temperatures
6,815,386	Use of Phosphates to Reduce Slag Penetration in Cr_2O_3-Based Refractories
6,793,910	Process to Accomplish Autothermal or Steam Reforming Via a Reciprocating Compression Device
6,743,405	Low temperature sorbents for removal of sulfur compounds from fluid feed streams

NASA Technology Helps Create New Company
GREENBELT, Md., Sept. 10 (UPI)
http://www.sciencedaily.com/upi/index.php?feed=Science&article=UPI-1-20070910-13392400-bc-us-nasa-nanotubes.xml
A National Aeronautics and Space Administration-developed innovative process has helped create a new nanotechnology company. Nanotailor Inc. of Austin, Texas, has licensed the Goddard Space Flight Center's unique single-walled carbon nanotube, or SWCNT, fabrication process to make high-quality, low-cost SWCNTs available commercially.

One of the basic nanotechnology structures, a carbon nanotube is a graphite sheet consisting of one atomic layer of carbon that is wrapped on itself to create an extraordinarily thin, strong tube. Although carbon nanotubes were discovered more than 15 years ago, their use has been limited due to the complex, dangerous, and expensive methods involved in their production. "Single-walled technology just hasn't taken off because of the cost," said Nanotailor President Ramon Perales. "If we can get the cost down, we can be a step ahead and make higher-quality nanotechnology more affordable."

Developed by retired Goddard researcher Jeannette Benavides, the key to the innovation is the ability to produce bundles of SWCNTs without using a metal catalyst, thereby dramatically reducing pre- and post-production costs while generating higher yields of better quality product.

Other start-up companies licensing the NASA process include Idaho Space Materials in Boise and E-City NanoTechnologies in the metropolitan Baltimore area.

MUMBO JUMBO GUMBO
http://www.uspto.gov/web/offices/ac/ahrpa/opa/kids/special/mumbo.htm
A light-hearted attempt to demystify patent and trademark legal terminology brought to you by the USPTO

Pipeline to Partnerships (P2P)
www.ott.nih.gov/P2P
The National Institutes of Health (NIH) has created **Pipeline to Partnerships (P2P)**, a virtual space for NIH licensees and NIH SBIR/STTR awardees to showcase technology and product development for an audience of potential strategic partners and investors. The site helps NIH in advancing its mission by furthering the development of its own licensed technologies or those for which it has provided SBIR/STTR funding.

ARS Recent News Items
www.ars.usda.gov/is/pr for details on these and many more significant developments:
Ticks Don't Come Out in the Wash
New Lab Methods Speed Testing of Fumigant Emissions
Bottlegourd Gene May Curb Cucurbit Virus
Initiative Takes Aim at Fungal Crop Disease Culprit
U.S.-Thai Scientific Efforts Peg Guava's Nutritional Value
Plant BioFactory Ramps Up Relief for Dairy Cows
New Pheromone Sprayer Leads Amorous Moths Astray
Mapping Prairie Grass Protein, Yield and Carbon
Mineral Nutrition's Impact on Neo-Natal Development
Socking It to Strawberry Root Rot
Exposing Wheat's Genetic Secrets
Fortifying Feed with Biodiesel Co-products
USDA Web Portal Offers Big Food Safety Benefits for Small Food Processors
Garlic's Goodness Best Released With a Crush
Organic, All-Fruit Bars Bear Out Value of ARS Process
Geneva Station Celebrates 125th Anniversary
Switchgrass: Bridging Bioenergy and Conservation
Three Scientists Inducted into ARS Hall of Fame
Areawide Approach to Fire Ant Control
New Sorghum is Ideal for Both Fuel and Feed
Potatoes Chock Full of Phytochemicals
Genetic Survey Finds Association Between CCD and Virus
Fungal Foam Targets Termites Inside Trees
Carriers of "Plaque" Gene at Greater Risk

Secretary Bodman Announces DOE Technology Transfer Coordinator
http://presszoom.com/story_135204.html
U.S. Secretary of Energy Samuel W. Bodman strengthened the Department of Energy's (DOE) efforts to transfer energy technologies from DOE national laboratories and facilities to the global marketplace by naming Under Secretary for Science, Dr. Raymond Orbach, as Technology Transfer Coordinator, in accordance with the Energy Policy Act of 2005 (EPAct). Secretary Bodman also established a Technology Transfer Policy Board, chaired by the Under Secretary for Science, to assist in coordinating and implementing policies for DOE's technology transfer activities.

NIH Launches Interdisciplinary Research Consortia
http://www.nih.gov/news/pr/sep2007/od-06.htm
For complete descriptions please visit: http://www.ncrr.nih.gov
The National Institutes of Health (NIH) Roadmap for Medical Research will fund nine interdisciplinary research consortia as a means of integrating aspects of different disciplines to address health challenges that have been resistant to traditional research approaches. The funding of these consortia represents a fundamental change in both the culture within which biomedical and behavioral research is conducted and the culture within the NIH where research projects are normally managed by an individual Institute or Center (IC).

"The Interdisciplinary Research programs within the Roadmap embody a central goal of the Roadmap — to help transform the way research is conducted," said NIH Director Dr. Elias A. Zerhouni. "These programs

are designed to encourage and enable change in academic research culture to make interdisciplinary research easier to conduct for scientists who wish to collaborate in unconventional ways."

.These consortia represent a new paradigm for NIH administration that will manage interdisciplinary programs through multiple NIH ICs in a truly trans-NIH manner. Management of the interdisciplinary research consortia will allow the NIH to act as a single entity rather than a collection of 27 individual ICs.

The missions of the consortia range broadly from deciphering the basis of neuropsychiatric disorders, to developing new approaches to drug discovery and targeted gene therapy, to preserving fertility in women with cancer, to understanding the fundamentals of the aging process, to a coordinated and systematic approach to regenerative medicine and obesity, to probing the relationship between self-control and addictive behavior, and to developing targeted molecular therapies for neurodegenerative disorders. The interdisciplinary consortia will integrate numerous disciplines including the basic biological sciences, genomics, proteomics, bioinformatics, biostatistics, biophysics, chemistry, gene therapy, stem cell biology, mechanical and tissue engineering, reproductive endocrinology, neurology, behavioral research, and the social sciences.

The consortia will be funded at a level of $210 million over 5 years. Each consortium has an overall principal investigator that is responsible for coordinating the efforts of the individual grant components.

The interdisciplinary consortia, overall principal investigator, and their institution are as follows:
Consortium for Neuropsychiatric Phenomics-Coordinating Center
Dr. Robert Bilder, Professor, University of California, Los Angeles
Interdisciplinary Research Consortium in Geroscience
Dr. Dale Bredesen, Director and CEO, The Buck Institute for Age Research, Novato, California
NeuroTherapeutics Research Institute
Dr. Paul Hagerman, Professor of Biochemistry and Molecular Medicine, University of California, Davis
Taskforce for Obesity Research at Southwestern (TORS)
Dr. Jay Horton, Associate Professor, University of Texas Southwestern Medical Center, Dallas, Texas
SysCODE: Systems-Based Consortium for Organ Design and Engineering
Dr. Richard Maas, Professor of Medicine, Brigham and Women's Hospital, Boston, Massachusetts
Northwest Genome Engineering Consortium
Dr. Andrew Scharenberg, Associate Professor, Children's Hospital and Regional Medical Center, Seattle, Washington
Genomic Based Drug Discovery
Dr. Edward Scolnick, Director, Psychiatric Initiative, Broad Institute of MIT and Harvard University, Cambridge, Massachusetts
Interdisciplinary Research Consortium on Stress, Self-Control, and Addiction
Dr. Rajita Sinha, Professor, Yale University, New Haven, Connecticut
The Oncofertility Consortium: Fertility Preservation for Women
Dr. Teresa Woodruff, Professor, Northwestern University, Chicago, Illinois

USPTO Publishes Measures to Improve Patent Quality
www.uspto.gov
Claims and Continuations Rules will improve effectiveness and efficiency of patent examination. The Department of Commerce's United States Patent and Trademark Office (USPTO) has published in the *Federal Register* new rules that will allow the agency to continue to make the patent examination process more effective and efficient by encouraging applicants to use greater precision in describing the scope of their inventions. The new rules will be effective on November 1, 2007.

Great Guava! Tropical Fruits Offer Nutrition — Along With Color, Taste, and Variety
Elizabeth A. Baldwin is with the USDA-ARS Citrus and Subtropical Products Research Laboratory, 600 Ave. S, N.W., Winter Haven, FL 33881; phone (863) 293-4133, fax (863) 299-8678.
For years, there's been a common notion that you get the best nutritional punch from a few well-publicized foods, such as blueberries, black beans, and broccoli. Well, they can move over now and make room for a surprising new addition: guava.

Until recently, only limited information has been available about the nutritional composition of tropical fruits—especially the more exotic ones. But in south Florida, growers are not only producing guava, carambola, mango, papaya, and citrus, but also pitaya, sapodilla, lychee, longan, and mamey sapote. So researchers at the U.S. Citrus and Subtropical Products Research Laboratory at Winter Haven, Florida, have been using standard methods to analyze these fruits for components that could be beneficial to human health.

The function of natural antioxidants and dietary fiber in foods and biological systems has received a lot of attention lately. Fruits and vegetables are playing an increasingly significant role in the daily diet, because many of them provide an optimal mix of antioxidants—such as vitamins C and E, polyphenols, and carotenoids—along with complex carbohydrates and fiber.

Antioxidants are plant chemicals that have the power to neutralize free radicals, which are harmful compounds that are both generated inside human bodies and found in pollutants like cigarette smoke. Reducing free radicals can only improve human health because the oxidative damage they cause to human cells is believed to trigger various chronic diseases. Free-radical damage has been linked to cancer, Alzheimer's disease, rheumatoid arthritis, cardiovascular disease, cataracts, age-related macular degeneration—and to the aging process itself.

It's no wonder that nutritionists and scientists have—for years—recommended that we eat five to nine servings of fruits and vegetables each day.

Using a variety of methods to analyze for individual nutrients, the researchers have shown that carambola (star fruit), red pitaya (also known as "red dragon"), and mamey sapote are all high in antioxidant compounds called "phenolics," and mamey sapote is also high in fiber. But the one fruit that beats them all is guava. It had the highest antioxidant potential (measured as ORAC values), total phenolics, vitamin C, and dietary fiber.

Guava's antioxidant content proved to be around that of orange, grapefruit, and broccoli, and just below that of spinach—all foods that are considered to be high in antioxidants. Other fruits that ranked surprisingly high in antioxidants included lychee and papaya..

DOE-Patented Process Improves Energy Recovery, Reduces Coal Prep Wastes
Full-Scale Operation Demonstrates Viability of Fine Particles as Energy Resource
Release Date: August 28, 2007
http://www.netl.doe.gov/publications/press/2007/07067-Patented_Process_Cleans_Coal_Fines.html
What began as a small in-house laboratory experiment to find a way to use discarded coal products called "fines" has now led to a full-scale demonstration that can boost coal operator profits, reduce waste at their plants, and recover valuable energy sources for consumers. An efficient, cost-effective process for recovering coal fines is significant in today's energy marketplace because 2 billion tons of coal fines are impounded in the United States, and about 50 million tons are added to that total each year at more than 700 coal impoundment sites.

In full-scale tests conducted by CQ Inc., of Homer City, Pa., the GranuFlow(TM) process - which was developed and patented by scientists at the Office of Fossil Energy's National Energy Technology Laboratory (NETL) - has shown that it can recover and clean a significant portion of coal fines to produce an added source of energy for the nation's future.

The full-scale tests were conducted to confirm previous test results at smaller scale, establish operating parameters for future commercialization, and generate the necessary information and data to commercialize the technology. In its recently released final report on the tests, CQ Inc. noted that the GranuFlow process experienced no operational, permitting, regulatory, or end-user problems at full scale. In addition, economic forecasts indicated that the process can add more than $1 million in annual profits for operators producing metallurgical coal and also add between $600,000 and $3 million for coal market values ranging from $50 to $100 per ton.

NETL received patents for the process in 1990 and 1995. Early research and scale-up demonstrations were funded by the Energy Department's Office of Fossil Energy, while the most recent, full-scale demonstrations were conducted under the Mining Industries of the Future Program within DOE's Office of Energy Efficiency and Renewable Energy.

Navy and Northrop Grumman Pursue Cooperative Research and Development
www.nswc.navy.mil/NEWS/navy_and_ng/navy_and_ng.html
Dahlgren, VA – Capt. Sheila Patterson, NSWC Dahlgren Disision Commander, signed a cooperative research and development agreement (CRADA) with Northrop Grumman at a ceremony held at Dahlgren on Sept. 6, 2007. The agreement enables integration of the Navy's accurate system timing and precision platform self-location capabilities with Northrop Grumman's electronic surveillance enhancement (ESE) to the surface ship AN/SLQ-32(V) electronic warfare system.

"This CRADA is important because it provides for the cooperation of government and industry on a problem of great importance to Sailors," said Reuben Pitts, NSWC Dahlgren Warfare Systems Department Head, after the event. "The resources of Northrop Grumman and the Surface Warfare Center can be applied with results in synergy to unlock the potential of evolving timing technologies."

"This CRADA has the potential to provide enhanced surface electronic warfare (EW) capabilities to the net-centric environment of the current and future Fleet," said Susan Hudson, NSWC Dahlgren Electromagnetic and Sensor Systems Department Head. "This is a great example of leveraging the government and industry teams in advancing electronic surveillance (ES) by defining requirements for accurate precision time and location capabilities across multiple platforms and then demonstrating the tactical utility with afloat and ashore testing."

"The CRADA has the ability to become a resource multiplier when funding is declining, but requirements are steady or increasing," said Lorraine Flanders, NSWC Dahlgren Office of Research and Technology Applications Manager. "It allows us to bring together the best of the best from Government and Industry to work collaboratively to meld our technologies. This produces a win-win situation for all involved, especially the warfighter, who receives a better product."

This work will be conducted at both NSWC Dahlgren and Northrop Grumman Integrated Systems. The CRADA's duration is three years.

Navy Goes Open: CNR Challenge Offers $1 Million for Innovative Science & Technology
Released: 6/22/2007
Arlington, Va. – The Chief of Naval Research (CNR) Rear Admiral William Landay III, USN, has announced the $1 million "CNR Challenge" for innovative science and technology ideas brought to the Office of Naval Research during the 2007 Naval Science and Technology Partnership Conference, which takes place July 30 through August 2 at the Marriott Wardman Park Hotel in Washington, D.C. The CNR Challenge gives registered conference attendees the opportunity to schedule face-to-face meetings with ONR decision-makers at the Open Innovation Marketplace to ask specific questions about Naval science and technology or to present new and innovative concepts and technologies.

Nasdaq picks brain for new health care index
Tue Sep 18, 2007, By Toni Clarke
BOSTON (Reuters) - Research and investment into brain-related illnesses is growing at an unprecedented rate as scientific advances coincide with the demands of an aging baby-boom population determined to beat the odds.

Now, investors looking to place bets on this fast-growing but highly specialized sector can.

Nasdaq Stock Market Inc is poised to launch an index made up of companies whose primary focus is the development of drugs, devices and diagnostics to treat neurological disorders, including Alzheimer's disease, Parkinson's disease and schizophrenia.

It is one of the first indexes ever to focus on a specific disease category, and Nasdaq expects it to interest several types of investors, from individuals touched by a particular disorder to those seeking to minimize the risk of stock-picking in a complicated industry.

"This index will be the defining metric for performance of companies in this very important segment of the health field," said Steven Bloom, senior vice president, Nasdaq Financial Products.

The index, to be called the Nasdaq NeuroInsights Neurotech Index, will launch on September 25 and has been created in conjunction with NeuroInsights, a research firm that monitors and analyzes trends in the neurotechnology field.

Companies in the 32-member index include drug makers such as Biogen Idec Inc which makes the multiple sclerosis drugs Avonex and Tysabri; device makers such as Northstar Neuroscience Inc which makes brain stimulation devices to help treat stroke and depression; and diagnostic companies such as Natus Medical Inc.

Together, they have a combined market value of more than $71 billion.

ARO-Funded Research Puts the Brakes on Light
www.arl.army.mil/www/default.htm
Researchers funded by the Army Research Laboratory's Army Research Office have demonstrated what was once thought impossible: the speed of light can be slowed, halted entirely, or in some cases, even reversed.

Not many years ago the concept of slow light was considered a mere novelty. Now, important applications resulting from slow light, such as improved communications, quantum memories, and more sensitive detectors, loom on the near horizon.

Light travels at a dazzling speed of 186,000 miles-a-second – or 700 million miles-an-hour -- taking only three seconds for a beam of light to travel to the 478,000 miles to the moon and back. This velocity enables nearly instantaneous communications across the globe, including the ability to send huge packets containing data and images very quickly - an important need for today's Army. However, researchers have long recognized that it is sometimes important to slow this speed, and consequently, recent breakthroughs in "slow light" research have been deemed exciting.

The Department of Defense has invested in this research from the outset, starting almost a decade ago. The first demonstration, using the ultra-cold Bose-Einstein condensate, revealed that light could be slowed so much that a bicyclist could outrace it. Shortly thereafter another research group showed that the same result could be achieved at higher temperatures using dilute atomic gas.

The basis of these approaches relied on a phenomenon known as electromagnetically induced transparency. ARO funded this fundamental work.

Slow light is crucial for long distance optical communications. Although light slows as it goes from air or vacuum to glass, this is only a modest effect. Recent work has demonstrated that light can be slowed by many magnitudes. As a result, DARPA has initiated a program to develop the technology to allow information to be maintained properly over long distances in fiber optic communications.

Light has also now been stopped entirely and trapped in atomic gasses, and then subsequently released again in its original form. This ability to convert quantum information in "busses" to stored quantum memory and back is an important need in quantum computing.

Another possible use of slow light is in sensors. As a pulse of light enters a medium and slows, it is compressed and its intensity increases. Although the total energy is conserved, the increased values in the compressed pulse will increase the sensitivity for various kinds of optical measurements.

This could be the foundation for an entirely new class of sensors, as John Howell at the University of Rochester has shown. Howell has been funded by ARO under a prestigious PECASE (Presidential Early Career Award for Scientists and Engineers) grant. Howell and his Rochester colleagues exploit a phenomenon known as coherent population oscillations, having discovered that this approach is more robust than previous approaches and relatively immune to the disruptive effects of collisions. They have also gone beyond mere "slow light" to "backwards light," chosen in 2006 by Discover Magazine as one of the top six physics stories.

ARO recently held a workshop that explored alternative ways to achieve slow light. Researchers at the University of North Carolina, Charlotte, demonstrated the ability to reduce by a factor of two light speed in the microwave region using alternating layers of anisotropic materials, an exciting finding because it is makes possible the ability to scale down the microwave wavelength of centimeters to submicron sizes.

Another approach to achieving slow light uses photonic crystals. These artificially created structures have an index of refraction that varies periodically throughout the length of the material. When this period is matched to the wavelength of the light that passes through it, light can bend around sharp corners and channeled for a host of electro-optic devices. The continual reflections and re-reflections from the crystal structure as the light propagates is responsible for light's pace.

Ironically, research into slowing the speed of light may soon be moving faster than the speed of light.

Navy Medical Research Center
http://www.nmrc.navy.mil/OTT/nmrc_res_srv_ott_lo_patents_pending.htm

Infectious Disease: Pending Patents to License

- Anti-Adhesin Based Passive Immunoprophylactic
- Recombinant Antigens for the Detection of Coxiella Burnetii
- Handheld Fluorescence Polarimeter
- Enhancement of Vaccine-Induced Immune Responses and Protection by Heterologous Boosting with Alphavirus Replicon Vaccines
- A Rapid Immunoassay of Anthrax Protective Antigen in Vaccine Cultures and Bodily Fluids by Fluorescence Polarization
- Methods and Compositions For Inducing Immune Response and Protective Immunity by Priming with Alphavirus Replicon Vaccines
- Orientia Tsutsugamushi Truncated Recombinant Outer Membrane Protein (r47) and (r56) Vaccines Diagnostics and Therapeutics for Scrub Typhus and HIV Infection
- Antigens and Their Use as Diagnostics and Vaccines Against Species of Plasmodium
- Poluynucleotide Vaccine Protective Against Malaria, Methods of Protection and Vector for Delivering Poluynucleotide Vaccines

FDA Licenses 15 New Blood Typing Tests
Tests help ensure safe blood transfusions for patients
September 14, 2007, 888-INFO-FDA
www.fda.gov/bbs/topics/NEWS/2007/NEW01699.html
The U.S. Food and Drug Administration today licensed 15 new blood typing tests that were previously unavailable in the United States.

These tests, known as blood grouping reagents, are used to determine the blood type of blood donors, an essential step in ensuring safe blood transfusion for patients. If mismatched blood is administered to a patient, it may cause a serious and potentially fatal reaction. To prevent such problems, people must receive compatible blood based on the results of blood typing tests.

The newly approved ALBAclone Blood Grouping Reagents include the common ABO and Rh tests, plus tests for rare blood types. The reagents are monoclonal antibodies, highly specific antibodies that ensure product uniformity and availability.

"The licensing of these reagents will provide more choice for blood establishments and transfusion services and may facilitate testing for rare blood groups," said Jesse L. Goodman, M.D., M.P.H., director of FDA's Center for Biologics Evaluation and Research. "Licensure of these additional blood grouping reagents will help ensure a more stable supply of these tests, especially important in the event of a product shortage."

The reagents are manufactured by Alba Bioscience, Inc. of Durham, N.C.

Army Research Lab Collaborative Technology Alliances
www.arl.army.mil/www/default.cfm?Action=93&Page=93
Welcome to the home page for the U.S. Army Research Laboratory's (ARL) Collaborative Technology Alliances (CTA) Program. ARL has established five CTAs in the areas of Advanced Sensors, Power & Energy, Advanced Decision Architectures, Communications & Networks, and Robotics. The projected scope of each CTA is approximately $35 million over five years and $20 million for a three-year option. A Research Management Board (RMB) extends participation in the Alliances to other Army organizations and other government agencies, including other Services. Each Alliance is managed by a senior ARL representative designated as the Collaborative Alliance Manager (CAM). A provision of the CTA program allows ARL the right to withhold up to 10 percent of the annual funding amount to fund innovative research done by parties external to the CTA program for innovative research. Inquiries should be made to the CAM. The contact information for each CAM, technical objectives for each Alliance, and a listing of the partner organizations are in the CTA Overviews section of the Web page.

EPA Does Partnerships!
www.epa.gov/epahome/partnerships.htm

- Environmental Stewardship - Find EPA programs and other resources that help businesses, communities, government agencies, and individuals protect the environment and contribute to a sustainable future.

- Partners for the Environment - EPA reaches out to business, industry, trade associations, communities, universities, and state and local governments to solve environmental problems not generally addressed by laws and regulations, such as reducing greenhouse gases, encouraging the design and use of energy-efficient products and buildings, and encouraging green chemical product design and engineering.

- Environmental Information Exchange Network EXIT Disclaimer - An Internet and standards-based secure data exchange between partners, built on the principles of integrated information, secure real-time access, and the electronic collection and storage of accurate information. The Exchange Network is made up of several components, including:

- Central Data Exchange (CDX) - Enables fast, efficient and more accurate environmental data submissions from state and local governments, industry and tribes to the Environmental Protection Agency (EPA) and participating program offices.

- Binational.net - The governments of Canada and the United States work cooperatively towards restoring and maintaining the chemical, physical and biological integrity of the waters of the Great Lakes Basin Ecosystem as stated in the Great Lakes Water Quality Agreement (GLWQA).

Binational.net is a collaboration between the United States Environmental Protection Agency and Environment Canada, to provide a single window on joint Great Lakes programs.

- Industry Partnerships - Programs for business and industry to participate in or benefit from.

- Labs for the 21st century - Is a voluntary program dedicated to improving the environmental performance of U.S. laboratories. The goal of the program is to encourage the development of sustainable, high-performance, and low-energy laboratories nationwide.

- Metabolic Engineering Working Group - A new approach to understanding and using metabolic processes.

- Midwest Partnership for Watershed Management Decision Support Systems - Develops, promotes, and disseminates web-based spatial decision support systems to help manage watersheds in the Midwest.

- Multi-Agency Sitewide Survey and Investigation Manual (MARSSIM) Workgroup - An ongoing, collaborative effort to bring consistency to the methods and processes used to demonstrate compliance with federal and state radiation regulations.

- National Environmental Performance Partnership System - In 1995, State and EPA leaders recognized they needed to work together more effectively – as partners – to solve the nation's remaining environmental challenges.

- OPPT and Tribal Environmental Network - The EPA's Office of Pollution and Prevention and Toxics (OPPT) has established a Tribal program to better communicate its programs and activities with Native American Indian tribes and to build more effective partnerships with Native American tribes in protecting and safeguarding the environment.

- West Coast Collaborative - a partnership of federal, state, and local agencies, business and non-profits, that are working to reduce air pollution emissions from diesel sources along the West Coast.

NIH Announces Licensing Opportunities for Biomarker-Related Technologies
http://www.ott.nih.gov/current_issues/current_issues.html
The NIH Office of Technology Transfer has developed a new brochure featuring biomarkers available for commercial licensing. This document may be found at biomarkers.pdf . It currently features over 200 biomarker technologies -- for detection, diagnosis, and prognosis of specific diseases.

Applications of the technologies include:
- Early drug development
- Dose selection
- Evaluating safety and efficacy of novel therapies
- Development of surrogate endpoints in clinical trials

The brochure has technologies listed under the following categories:
- Cancer
- Infectious Diseases
- Gene Based Therapies
- Central Nervous System
- Dental Technology
- Internal Medicine

NIST, SRC-NRI Partner to Advance Next-Generation Computer Technology
http://www.nist.gov/public_affairs/techbeat/tb2007_0913.htm#src

The National Institute of Standards and Technology (NIST) and Semiconductor Research Corporation (SRC), a university-research consortium for semiconductors and related technologies, today announced a public-private partnership to support research and innovation in nanoelectronics, with a goal of developing a radical, yet practical, successor to the basic electronic building blocks in today's computers. Over the next year, NIST will contribute $2.76 million to the effort, which, when combined with funds from industry, will fund nearly $4 million for the first year of a planned five-year program.
The partnership will fund a variety of high-priority research projects identified by the Nanoelectronics Research Initiative (NRI), one of three research program entities of SRC that coordinates work in nanoelectronics among major universities across the country. Through the initiative, researchers will strive to replace the world's most commonly used electronic component, known as the Complementary Metal-Oxide Semiconductor Field-Effect Transistor (CMOS FET), which has driven the world's computers for more than 30 years but may hit its technological limits in the next decade. NIST chose NRI as a partner to accelerate research in electronics that goes beyond CMOS though an open competition launched in May, 2007. The competition was part of a NIST-wide effort to explore new models of public-private partnerships for R&D investment to accelerate and promote innovation.

Linking NIH Laboratories to Universities in the Training of Graduate Students
http://gpp.nih.gov

The Graduate Partnerships Program (GPP) links the National Institutes of Health (NIH) to national and international universities in the training of graduate students. You get the best of both worlds – the academic environment of a university and the breadth and depth of research at the NIH. A different kind of graduate experience emerges, one which focuses on training the next generation of scientific leaders by accelerating communication and collaboration skills. Over 450 graduate students, representing more than 100 universities world-wide, work and study at the NIH.

The GPP helps prepare NIH graduate students to become innovative and creative leaders in the scientific research community. We provide programs, services, individual assistance, and resources to enhance academic, professional and career development.

The National Institutes of Health (NIH) is the primary source of biomedical research support in the United States. The NIH conducts cutting edge research and training on its own campuses and fosters research and research training at universities around the U.S. The mission of NIH covers the full spectrum of science, from discovery of new fundamental knowledge about living systems to applying knowledge to improve health and fight disease.

NEWS FROM THE PRIVATE SECTOR

Young Startup CEO Learns Licensing From Military Can Be Painless
July 2, 2007, By Muphen R. Whitney
www.techjournalsouth.com/news/article.html?item_id=3411
BALTIMORE - It started as a senior project in a managerial accounting class at Johns Hopkins University (JHU) in Baltimore. Over the past two years that project has grown into Baltimore Shipping Technologies, LLC -- a startup company that has partnered with the Indian Head Division of the Naval Surface Warfare Center (IHDIV, NSWC) in Indian Head, Maryland, to commercialize a shipping container originally developed for military use.

"I was an International Studies major, and I had most of the requirements for my major wrapped up," explains 24-year-old Thomas Grogan, CEO of Baltimore Shipping Technologies, LLC. "Professor Larry Aronhime is a good, friendly teacher, and I knew I would get involved with business at some point in my life so I took Professor Aronhime's managerial accounting course."

Aronhime's course required a project to analyze and assess the commercialization potential of a technology developed in one of the military laboratories in Maryland. Grogan and his project partner, Benjamin Gibbs, were assigned to IHDIV, NSWC, which assigned them the JMIC as the subject of their project.

But there are several large leaps between writing about a product for a senior class project and starting a new company to commercialize that product.

Grogan and Gibbs graduated from JHU in 2005 and worked at a series of part-time jobs while they were getting their new start-up off the ground. (Gibbs has since taken a full-time job elsewhere, but remains part of the company). The first task was to license the technology from IHDIV, NSWC.

The process of licensing technology from a naval laboratory is not as arduous and time-consuming as one might think. "It was a very straightforward process and was fairly painless for us," says Grogan. "We just followed the few steps of the process and submitted the application. The entire process was completed in less than three months. "We reached an agreement and are content with the terms, and everything can be renegotiated at any time."

Grogan recommends that anyone working to license technology from the military should find a technology that looks promising, do the appropriate market research, and then "go ahead and license it if you think it will work. Establish a good relationship with the people from the Tech Transfer office at the facility you want to deal with. Get to know the inventor of the technology, and meet with all those involved in the tech transfer process."

Baltimore Shipping Technologies received $90,000 from the Maryland Technology Development Corporation to develop the OmniPack, a commercial prototype of the JMIC. Using new materials for the commercial version will cut costs on two fronts (the cost to manufacture the unit will be lower and the shipping costs for the customer will be lower because of the commercial units' lighter weight) and will make the container more attractive to smaller shippers.

The military version will still be available to the Navy, and Grogan says that the Department of Defense has shown an interest in having all the military services use the container for the sake of consistency.

The licensing agreement is in place, and the prototypes will be finished in August; Grogan is facing his next challenges: hiring the right people for management roles in his company and finding more funding.

"I don't have a shipping background...this has been the hardest part," says Grogan. "So I am looking for management that has shipping experience. We need to get senior executives involved. And now that the prototypes are finished, we need more money to complete the commercialization process."

Progress of U.S. Climate Change Science Program Evaluated
http://www.nationalacademies.org/morenews/20070913.html
September 13 -- The U.S. Climate Change Science Program has made good progress in documenting and understanding changes that are occurring on a global scale, but less progress has been made in the study of regional impacts, human vulnerabilities, and mitigation and adaptation options, says a new National Research Council report. The program also needs to better communicate with decision makers at national and local levels, the report adds.

AURIL Launches "Facebook"-Style Social Networking Site for Knowledge Transfer Professionals
Tech Transfer E-News, Wednesday October 10, 2007
AURIL, the leading association for knowledge transfer professionals in the UK, tomorrow is formally launching a social networking site in the style of "facebook" that it calls "one of the most important communication tools to hit the knowledge transfer network for the last 20 years." The site was previewed for AURIL members last week but will be formally launched at the AURIL annual conference in Cork Thursday. Go to: http://www.auril.org.uk/pages/network.php

ECONOMIC DEVELOPMENT NEWS

Baltimore Working To Position Itself as a Destination For Biotech Companies

Jul 5, 2007, www.examiner.com/a-813850~Baltimore_working_to_position_itself_as_a_destination_for_biotech_companies.html
When it comes to building an industry, critical mass is key. That's why those monitoring the nascent biotechnology industry in the region are looking beyond the Baltimore Beltway. "We're not really competing with Montgomery County. It's part of our greater region, but [business] is moving up this way because of cost and congestion," said Brad McDearman, executive vice president of the Economic Alliance of Greater Baltimore.

The greater Baltimore region ranks fourth in venture capital nationally with more than 144 deals, and sixth in overall money invested in biotech, according to a report published by the alliance on Friday. Those rankings are significant when you consider that 89 percent of the dollars invested in biotech went to the top nine regions. The region, which includes greater Washington, has drawn more than $990 million over the last five years, the report states, and is experiencing 134 percent growth.

Most local entrepreneurs and biotech businesses come from the universities, and federal institutions such as the National Institutes of Health, Aberdeen Proving Grounds and Fort Detrick in Frederick County, McDearman said.

Those resources create a massive bank of new ideas, therapies and technology for entrepreneurs to draw from, he said. That can draw investment, Ph.D.s and established biotech companies.

Regional Report Brings Greater Baltimore Bio Market into Focus
Fri, 29 Jun 2007, Economic Alliance of Greater Baltimore
http://www.earthtimes.org/articles/show/news_press_release,131792.shtml
BALTIMORE, June 29 /PRNewswire/ -- Greater Baltimore is a strong opportunity market with a powerful base of institutions and scientists focused on research and discovery, according to a report on the regional biosciences industry released today by the Economic Alliance of Greater Baltimore.

When compared to the California bioscience market, which extends from San Francisco to San Diego and is traditionally known for being the world's bioscience epicenter, the Northeast corridor that extends from Washington DC to Boston covers less linear distance from end to end, yet possesses more biotech firms, employs more people in the biosciences, and has had about the same amount of total venture capital investment for biotech since 2002. Over 83% of all venture capital invested in biotech was in these two coastal corridors.

Other findings from the report include: -- Washington-Baltimore ranks 1st among top biosciences hubs for growth of venture capital for biotechnology in the past five years, ahead of Boston/New England (2nd) and New York (3rd); -- Washington-Baltimore ranks 1st for percentage of the population holding advanced degrees, Boston ranks 2nd and San Francisco/San Jose ranks 3rd; -- Washington-Baltimore ranks 3rd out of the country's top cities for number of biotech firms and employment in research, testing, & medical labs, New York is 1st and LA is 2nd; -- Johns Hopkins University ranks 1st among all universities for NIH awards to institutions.

The report is available for download at the Economic Alliance's website, http://www.greaterbaltimore.org/ .

BRAC Planners Seek Ways to Fill 19,000 Jobs
Sep 29, 2007, by Matthew Santoni, The Examiner
http://www.examiner.com/a-962149~BRAC_planners_seek_ways_to_fill_19_000_jobs.html?cid=rss-Baltimore
Aberdeen, MD - Filling the 19,000 military and defense-contractor jobs being moved to Aberdeen Proving Ground will require more networking and more high-tech education, planners said. Aberdeen Proving Ground is expected to draw more than 8,000 jobs on-base, a third of which will be in engineering and scientific fields, said David Shaffer, deputy commander of the Army's research, development and engineering command.

Innovation Park At Penn State To Add Two New Buildings
Thursday, August 16, 2007, http://live.psu.edu/story/25412
University Park, Pa --- The construction of two new buildings is expanding Penn State's Innovation Park by 148,000 additional square feet and supporting the expansion of current companies and the region's economy.

The first building will be completed and ready by November. The 64,000-square-foot, three-story building already has more than 50 percent of its tenants in place. A second building at 329 Innovation Boulevard, with 84,000 square feet, is expected to begin in August and be completed by late next year.

"Innovation Park is reaching a critical mass," said Dan Leri, Innovation Park director. "We are seeing continuing success at helping companies transfer the knowledge within the University to the marketplace and to foster economic development. The Park is the place where collaboration between the University and private sector companies can grow."

Innovation Park was constructed in 1993 to assist in the economic revitalization of the Commonwealth of Pennsylvania. The 118 acres is designated for business development, including incubating start-up companies through mature corporations, as well as services to support businesses and their employees.

For more information on Innovation Park at Penn State, see http://www.innovationpark.psu.edu/.

Maryland Incubator Adds New Facility, More Clients
www.nbia.org/resource_center/review/07Jun/incubator_roundup.php
Bigger certainly seems to be better for the Frederick Innovative Technology Center Inc., which opened its second facility in February. After filling a 10,000-square-foot building at Hood College in Frederick, Md., within seven months of opening in 2005, FITCI knew its newest addition had to be done on a much grander scale. Roughly doubling the size of FITCI's first facility, the second site's 20,000-square-foot space is located about five miles away and can house up to 35 offices and 16 research and development labs.

Byrd Lands Tentative Approval of Grant for Energy Research
By Mannix Porterfield
Published: June 29, 2007, Register-Herald reporter
www.register-herald.com/local/local_story_180215131.html
A push is on by Sen. Robert C. Byrd to accelerate research into alternative energy uses of coal, and toward that goal, he has gained tentative approval of a $533 million investment in a Morgantown firm. Byrd, a Democrat, said his goal is to speed up research in an effort to find ways of lessening America's reliance on an unstable foreign oil market.

"We must invest in the talent and the technology to break our dangerous reliance on oil from places like Saudi Arabia and Venezuela," Byrd said after a key panel endorsed the grant for National Energy Technology Laboratory. "If we do not, American families will continue to be held hostage to the whims of dictators and despots alike. By speeding the research at facilities like the National Energy Technology Laboratory in Morgantown, we speed the day that American families can rely on American energy to power their cars and cool their homes."

"NETL is the nation's top-flight facility dedicated to finding new ways to cleanly and efficiently take advantage of our energy resources here at home," the senator said. "These dollars are a down payment on America's energy independence."

With project manager on board, Wallops Research park lifts off
By Stephen Furness
www.delmarvanow.com/apps/pbcs.dll/article?AID=/20070707/ESN01/707070305/-1/ESN
WALLOPS -- The Wallops Research Park will strive to provide an enduring environment that is attractive to science, technology and educational efforts to supplement the capabilities of Wallops Flight Facility and other entities, its new project manager said this week. Amy Bull also said it will aid the capabilities of the Marine Science Consortium, while contributing to Eastern Shore economic development.

"This is for the economic development of the county," said Bull. "It's providing jobs for residents of the Shore, be it family wages for folks here ... to high-end jobs that degreed persons can have."

The park encompasses 240 acres just outside the NASA-Wallops Flight Facility's front gate. NASA has designated 85 acres of land, the Marine Science Consortium will have 63 acres, and Accomack County will have 92 acres.