



Microsystems Monthly

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Mid-Atlantic Micro-Nano Alliance Mission Statement:

To network expertise, capabilities, and research to facilitate the development of new applications and commercialization of miniaturization technologies.

Good news for the Mid Atlantic Region- We are out of the woods (recession wise)

The debate has begun as to whether the recession is over, but a quick look to the Mid Atlantic Region continues to show positive signs for our community. Here are the three drivers of importance to the Mid Atlantic Micro Nano Alliance:

- 1) Employment in Engineering and Science is up
- 2) The Mid Atlantic Region is a growing High Tech Magnet
- 3) The effects of the recession has been mitigated by the stabilizing effect of the Government employment in the area

Point one is noted in the Department of Labor's Bureau of Labor Statistics report that states employment in three high-tech job categories -- electrical and electronics engineers; software engineers; and computer scientists and systems analysts -- returned to levels last seen in 2008. For electrical and electronics engineers (EEs), employment grew 7.8 percent from the fourth quarter of 2009 to the first quarter of 2010, and now stands 16.1 percent above its historical low in the first quarter of 2009. The unemployment rate for EEs has fallen from a high of 8.6 percent in the second quarter of last year to 4.6 percent in the first three months of 2010.

Are we rated 4, 5 or 10th for high tech regions? It depends on your source. Dice.com ranks Washington in the top five for volume of job openings on their web site. The Washington metro area's economy has outperformed much of the nation, thanks to the stabilizing force of government.

The US News and World Report (9/15/2009) ranked the Washington-Arlington-Alexandria as fourth among tech poles. The capital area is the North American leader in high-tech services, placing in the top ten in six out of eight high-tech service categories. Overall, firms in the Washington metro employed 275,700 high-tech workers in 2007, double the average concentration in North America.

There is a regional flare to tech centers. Often a High Tech "magnet zone" will be noted for only a few technologies and this is true in the mid Atlantic region.

Good News for the Mid Atlantic region continues on page 3

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Chairperson's Notes——“What’s in your Social network?”

To members of the Mid Atlantic Micro-Nano Alliance:

It was great to help sponsor the Nanomaterials Symposium at the Kossikoff Center at JHUAPL in Laurel Maryland on the 19th of April. In particular, it was rewarding to see the Ipad Nano raffled off and won by a young USNA Midshipman. Just 6 months after that event, our Alliance will host an all day symposium (October 19th) at the same location. The topic of our symposium will be commercialization of Micro-Nano technologies. Although plans are in the early stages, this looks like it will be an outstanding event.

The cover piece this month reflects on the potential of the Mid Atlantic region as a technology growth center. Unlike so many of our peers who are looking at declining employment and work infrastructure base we are still holding strong and growing. This serves as a reminder of the importance of strong networks such as the Mid Atlantic Micro-Nano Alliance to develop our business and academic presence. It is one more social network presence to add to your portfolio. We beat out Twitter and Facebook just in the initial screening of the information imparted. We won’t “tweet” you about the choice between fried or broiled chicken or whether gray cars get dirtier than blue cars. We will attempt to keep everyone engaged on work related issues of merit to our community.

Please go ahead and mark your calendars for the 19th of October for our annual “network event”.

Best regards,



Brian Jamieson

Save the Date...Next Steps in Managing Innovation May 12th

Plymouth Meeting PA

NASA SBIR/STTR contractors and other prime contractors will have the opportunity to learn about new technology access channels and how to leverage mutual opportunities of interest <http://ipp.gsfc.nasa.gov/innovation-workshop/index.shtml>

NASA Goddard Space Flight Center Innovative Partnerships Program Office
Laura Walker Phone: (301) 286-8017

The Federal government generates the massive data-processing support and attracts defense and aerospace contractors. This explain the pre-eminent role of the region in computer systems design and related services, where it has more than five times the average concentration found in North America. The National Institutes of Health (NIH) and its spin-offs in the biotech area aid the metro area's performance and our strength in Bio technologies continues to grow.

"Contrary to common wisdom, high technology varies from place to place." In most high tech regions, high tech employment is concentrated in only a few industry segments. Metropolitan areas that show high concentrations of high tech employment in one technology, like software, will show very low concentrations in hardware (Washington D.C., Denver and Atlanta). Other regions show the opposite pattern: Phoenix is an employment center for hardware, but weak in software. (North America's High Tech Economy: The Geography of Knowledge-based Industries by Ross DeVol 06/02/2009 Millken Institute). A Brookings institute study (Center on Urban and Metropolitan Policy) iterates on the concept of high tech specialization as measured by: employment concentration, patent activity, and venture capital flows. (High Tech Specialization: A Comparison of High Technology Centers Joseph Cortright and Heike Mayer Institute of Portland Metropolitan Studies, Portland State University Brookings Institute) ranks the database (software engineering) as a principle product specialization of our region.

Although we are hosted in an academically gifted area with rising employment we are still a smaller player in the high tech world. This only provides the opportunity for growth in the realm of micro and nano technologies especially in support of biotech applications. The Mid Atlantic Micro-Nano Alliance allows us to be a more cohesive larger entity able to draw on the strengths of regional employment, intellectual property, venture capital and the areas high energy momentum. A perfect recipe for continued growth as a high tech region.

Ann Darrin

Save the Date: The next Mid Atlantic Micro-Nano-Alliance Symposium is scheduled for October 19th, 2010 at the Kossiakoff Center JHUAPL Laurel MD!

Business/Research Opportunities

DARPA AND RDECOM

DARPA BAA 10-45, Compact Mid-Ultraviolet Technology, FedBizOpps/CBD 22 March 2010

DARPA SN-10-35, RFI - Enhancing Tactical Information , FedBizOpps/CBD 24 March 2010

DHS BAA 10-10, Automatic Target Recognition Algorithms Development For Advanced Imaging Technology, FedBizOpps/CBD 23 March 2010

DARPA 10-48, Sferics-Based Underground Geopositioning (S-BUG), FedBizOpps/CBD 15 March 2010

DARPA BAA 10-50, Graph Understanding and Analysis for Rapid Detection - Deployed on the Ground (GUARD DOG), FedBizOpps/CBD 31 March 2010.

RDECOM W15QKN-10-X-0503, Nanotechnology, FedBizOpps/CBD 30 March 2010.

MARYLAND TEDCO

Tech Transfer: The Maryland Technology Transfer and Commercialization Fund (MTTCF), A Signature Funding Program

The MTTCF program supports companies' technology development projects that transfer technology to the commercial sector from any university or Federal laboratory in Maryland. The Fund also supports any companies in an approved incubator that desires to move technology projects forward, and are taking advantage of incubator business services. Funds up to \$75,000 are available to defray a company's direct cost of developing early stage technology.

For more details, including Guidelines and Investment Agreement Forms, visit www.marylandtedco.org, and click on "Funding Opportunities" under TEDCO Programs.

NSF National Science Foundation (<http://www.nsf.gov/funding/>)

Small Business Innovation Research Program Phase I Solicitation FY-2011 (Release 1) (SBIR) - The Small Business Innovation Research (SBIR) Program stimulates technological innovation in the private sector by strengthening the role of small business concerns in meeting Federal research and development needs, increasing the commercial application of federally supported research results, and fostering and encouraging participation by socially and economically disadvantaged and women-owned small businesses.

UPCOMING EVENTS (continued)

May 1, 2010



Energy Harvesting & Storage Europe and Wireless Sensor Networks & RTLS Summit 2010

Holiday Inn Munich City Centre Munich, Germany May 26 - 27, 2010

International conference and exhibition assessing the applications, technologies and opportunities for [energy harvesting and storage](#).



The 8th Annual MEMS Symposium MEMS and IC System Integration -- From Sensing to Awareness

Wyndham Hotel San Jose, California May 20, 2010

MEPTEC is pleased to announce their afternoon keynote speaker, [Philippe Kahn of Fullpower Technologies](#).



Sensors Expo & Conference 2010

Donald E. Stephens Convention Center Rosemont, Illinois June 7-9, 2010

Visit <http://www.sensorsexpo.com> for details! **Electronics & Microsystems**

Nanotech and Microtech 2010 Joint Program Announced

Special Symposia in: Nano Electronics, NanoFab, NanoSimulation, NanoReliability, Inkjet, MEMS Device & Fab

Speakers Include: Lockheed Martin, GE, Eastman Kodak, Toray, Fuji Electric, Sanyo, Omron, Honda, Samsung, Panasonic, Siemens, Dimatix, Accelrys, Intel, IBM, Texas Instruments, Applied Materials, Nanolnk, Agilent, SoftMEMS, Raith, Asylum, FEI, Veeco, Wispry, Nextreme, SiTime, TransiC, Baolab, Microlyne, Microvision, Alces, Sand 9, Bartels, Daimler, Infineon, Bosch, Honeywell, Triad Semiconductor, ST Microelectronics and hundreds of leading researchers from around the world...[View Program](#)



Hilton Head Workshop 2010:

A Solid-State Sensors, Actuators and Microsystems Workshop

Crowne Plaza Resort Hilton Head Island, South Carolina June 6 - 10, 2010

The thirteenth in the series of [Hilton Head Workshops](#) on the science and technology of solid-state sensors, actuators, and microsystems will be held on June 6-10, 2010.

Attendance will be [limited to 450 participants](#), with preference given to authors.

News bites from the Region

Gary Rubloff and Carol Espy-Wilson named for Univ of Maryland Inventions

At its annual Invention of the Year Awards ceremony, the UM Office of Technology Commercialization named two projects by Clark School professors as 2009's top UM inventions. Professor Carol Espy-Wilson (ECE/ISR) and research graduate assistant Srikanth Vishnubhotla were recognized for "Multi-Pitch Tracking in Adverse Environments". Nano Arrays for Energy Storage," invented by professors Gary Rubloff (materials science and engineering, Maryland NanoCenter, UMERC and ISR) and Sang Bok Lee (chemistry), research assistant Parag Banerjee and others, also won. Their invention offers high-density energy storage for vehicle and electronic device batteries. The arrays have a capacity 10 times higher than available products and can be produced using inexpensive materials. More at: <http://www.newsdesk.umd.edu/scitech/release.cfm?ArticleID=2134>

ISR Director and MAMA member, [Reza Ghodssi](#) (UMD ECE/ISR), will be participating in the inaugural [European Union-U.S. Frontiers of Engineering Symposium](#) (EU-US FOE), Sept. 1-3 in Cambridge, U.K. The symposium is organized by the National Academy of Engineering (NAE) and the European Council of Applied Sciences and Engineering. Ghodssi is one of only 60 engineers invited to participate from EU and US industry, universities, and government labs. Generally, the engineers are not older than 45. [Four topics will be covered](#) during the symposium: signal processing, bio-inspired engineering, augmented reality, and materials ecology. As a participant, Ghodssi will be describing his research in a poster session.

NSF-NRI Graduate Student and Postdoctoral Fellow Supplements to NSF Centers in Nanoelectronics (NSF 10-031) - Nanoelectronics Research Initiative (NRI) to provide supplemental funding opportunities to NSF centers involved in long-term nanoelectronics research. The supplemental funding supports additional graduate students and postdoctoral fellows to work in collaborative efforts with participating NRI company assignees on exploring new concepts beyond the scaling limits of CMOS (Complementary Metal Oxide Semiconductor) technology. Such efforts are intended to enhance nanoelectronics research and education, strengthen industry linkages with NSF centers, and develop future cadres of industry and faculty researchers to help drive the field. NRI is encouraging exploratory nanoelectronics research at universities on topics with the potential for maintaining the historical scaling of both computational power and cost of information processing. This program awards five or six NSF centers to receive supplemental funding, in the range of \$200,000 to \$400,000 total funding each, for duration of two or three years. All NSF centers (this includes networks) involved in nanoelectronics research are eligible to apply, including those that were awarded supplements in the previous competitions. Submission Deadline: May 10, 2010.

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If you need to speak to a live person try emailing ann.darrin@jhuapl.edu.