



University of
Massachusetts
Dartmouth

University of Massachusetts Dartmouth
285 Old Westport Road
North Dartmouth, MA 02747-2300

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Contact	Michael Sullivan
Maeve Hickok	Marketing
News Office	ATMC
508 999-8765	508 910-9830

Advanced Technology and Manufacturing Center achieving mission New business development, academic/industry research on-going

When the Advanced Technology and Manufacturing Center of the University of Massachusetts Dartmouth opened this winter in Fall River, it promised to create the synergy of academic research and business entrepreneurship that drives high-powered economic growth.

Now the ATMC has started to deliver on that promise. Three developing businesses have relocated to the ATMC's Technology Venture Center. They and their presidents are: Tracey Dodenhoff, Predictive Technology, Inc., which commercializes proprietary methods of diagnosing respiratory disorders; John Miller, Micro Magnetics, Inc., which develops advanced sensor products, and Steven Hemingway, International Compliance Systems, Inc., a web-based compliance management software / service company.

At the same time, the ATMC's research and partnering labs are building on the expertise of UMass Dartmouth's engineering faculty who involve their students in development and testing of new scientific knowledge and applications. The student interns employed through faculty grants gain invaluable collaboration and networking experience in addition to the practical application of their technical studies.

"We knew the ATMC would accomplish its mission," said UMass Dartmouth Chancellor Jean F. MacCormack. "This is a from-the-ground-up effort that is already producing the significant business and academic partnering that we envisioned in its planning and construction. We couldn't be more pleased, or grateful to the visionaries— such as Bob Karam— who made the ATMC a reality."

Karam, a Fall River businessman and a UMass trustee for 19 years, said, "I believe that the establishment of the ATMC in Fall River, along with SMAST in New Bedford, creates the most critical scientific and economic potential for the SouthCoast since the campus of UMD began its development in Dartmouth. This partnership with the accomplished faculty at UMD and the manufacturing community of Southeastern Massachusetts and Rhode Island will reap great benefits for the people of Fall River and the SouthCoast. It is critical, however, that our Legislative delegation do everything in their power to obtain the full funding promised for the ATMC. We can not allow or excuse the shortchanging of this region once again. "

The \$16 M ATMC is a 60,000 square foot two-story building designed and built by MassDevelopment to anchor the redevelopment of the 17-acre Kerr Mill site by attracting technology companies and manufacturers to the region.

The ATMC formally opened its doors November 1. The event welcomed the state's political and business leadership as well as members of the local community, many of whom had ties to the site where the Kerr Mill stood before it was destroyed by fire in 1987.

"The ATMC was designed to enhance technology-based economic development in our region," said Senatoir Mark Montigny (New Bedford), Chairman of the Senate Ways and Means Committee.

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“Through its partnership with the university, the ATMC will help to further develop the technology of the SouthCoast as well as the future of its workforce,” Montigny said.

Senator Joan Menard (Somerset) said: The introduction of the first three businesses in development at the Advanced Technology and Manufacturing Center marks a great milestone for both the University of Massachusetts Dartmouth and the economic prosperity of our region. The continued growth and development of the ATMC is a testament to what can be accomplished through a working partnership of motivated citizens, political leaders, government entities, higher education, business and industry."

Representative Robert Correia (Fall River) said: “I am extremely thrilled with the announcement. It certainly proves that this is just the beginning of a successful engine for economic improvement in our area. I congratulate those from the staff at the ATMC as well as the businesses for such a wonderful beginning.”

“ It is tremendously exciting to witness the ATMC blossom into the economic incubator that it was destined to become. The collective efforts of all involved have effectively resulted in launching Southeastern Massachusetts into the era of high powered economic growth,” said Representative Michael Rodrigues (Westport)

Representative David Sullivan (Fall River) said: “The utilization of the ATMC is the product of many years of cooperative efforts through the local legislative delegation, MassDevelopment, City of Fall River, private industry, and UMass Dartmouth. All these entities came together to take a dream and turn it into reality.”

Representative Patricia Haddad (Somerset) said:"It has become crystal clear to me that the vision of the ATMC is well on its way to being fulfilled for all the communities of the South coast. Welcoming these three businesses today marks yet another step in the economic development and growth of the region."

The facility consists of research and partnering laboratories, a conference center, and the Technology Venture Center, which offers numerous services to support developing businesses. The director is Dr. Roy Miller, an aerospace engineer with previous experience running established and entrepreneurial businesses in a variety of high technology fields.

Roy Miller said, “ This great facility is the cornerstone of the Center. The laboratories, equipment, and excellent conference capabilities are critical to the nurturing and transfer of technology. The U Mass Faculty Associates bring the required technical knowledge base and mentoring for our student intern workforce. Couple this with the dedicated professional staff of the Center, and all of the ingredients are in place to support our industrial partners and developing companies in our Technology Venture Center.”

Tracey Dodenhoff, former director for Rhode Island’s Slater Center for Design Innovation, has returned to her entrepreneurial roots to commercialize a technology licensed from the Naval Undersea Warfare Center in Newport RI. Predictive Technology, Inc. (PTI) was founded by Dodenhoff to commercialize proprietary methods of diagnosing respiratory disorders.

“The decision to locate in the ATMC was based on location, visibility and resources,” said Dodenhoff. “We believe that this decision has the potential to positively impact our commercialization timeline”.

PTI’s entry product is able to identify sleep apnea in under half-an-hour while the patient is awake. This development dramatically reduces the cost and inconvenience of identifying a patient with sleep apnea while maintaining accuracy. Additional developments include pediatric apnea diagnosis and Sudden Infant Death Syndrome (SIDS) susceptibility testing. Through a relationship forged between Rhode Island Hospital and the Naval Undersea Warfare Center, PTI is completing testing of its technology with promising results. The company’s management team is currently seeking equity funding and is targeting a fall 2003/winter 2004 product launch.

Obstructive sleep apnea is caused by a blockage of the airway, usually when the soft tissue in the rear of the throat collapses and closes during sleep. Sleep apnea is linked to high blood pressure, heart disease, heart attack, pulmonary hypertension, congestive heart failure, neuropsychiatric problems, stroke, memory loss, impaired judgment and injury from accidents. The national Sleep Foundation estimates 20 million Americans suffer from a sleep apnea with at least 50 percent of sufferers remaining untreated due to the high cost of diagnosis. It is estimated that nearly 80 million Americans will have a sleep problem by the year 2010

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and 100 million will have one by the year 2050. The estimated annual cost in North America for diagnosis and treatment of sleep apnea is approximately \$30 billion and is expected to grow 20% annually (source, National Research Bureau).

Dodenhoff credits the ATMC with tipping the scales in favor of locating in Fall River. "It was difficult to seriously consider any other location, given the opportunities provided at the ATMC. Locating here is an important part of our overall business development strategy".

John Miller, president of Micro Magnetics, Inc., opened corporate offices at the ATMC on April 1st. Micro Magnetics develops its advanced sensor products by employing proprietary technology licensed from Brown University. He chose to locate at the ATMC because it offers access to UMD faculty and students, state-of-the-art laboratories, and easily adaptable space for the company's anticipated expansion.

Micro Magnetics is working to solve a variety of sensing challenges by using the technology developed for high-density computer hard drives. Its first product is a scanning magnetic microscope that is capable of seeing the flow of electricity inside an Integrated Circuit (IC) computer chip. Using new magnetic materials employing phenomena such as Giant Magneto Resistivity (GMR) and Magnetic Tunneling Junctions (MTJ), the microscope can see features as small as one hundred nanometers, one hundred billionths of a meter. This is 10,000 times smaller than a human hair.

The technology for the scanning microscope was developed under a Small Business Innovative Research (SBIR) grant from the National Institute for Science. Micro Magnetics was selected for a new grant to study a growing challenge to computer chip production, electromigration. As the electricity carrying lines on chips have become smaller and smaller, the impact of electrons flowing on these incredibly small lines is causing the chips to fail. In effect, the electrons act like water and can carry away the aluminum or copper atoms in these circuits, eroding holes in the lines.

The Micro Magnetics microscope is the only product in the world that can take pictures of electromigration as it happens. Incredibly, because the microscope uses the magnetic fields generated by the electricity, it can actually see inside a chip that may be made of many layers of circuits. Micro Magnetics is currently evaluating sample chips from three of the largest manufacturers in the US and will assist these companies in developing new ways of making chips to avoid electromigration.

Miller said, "Micro Magnetics sees great potential in locating in Fall River. I believe that Fall River has, with the ATMC and other initiatives, put the right pieces into place to foster high technology industry growth," he said. The company's Chairman, Dr. Gang Xiao, a full professor at Brown University, is impressed with the education infrastructure provided by proximity to Brown and the University of Massachusetts at Dartmouth, as well as Bristol Community College and regional vocational schools.

Steve Hemingway, President of International Compliance Systems, Inc., said he established the company to provide applications that assist organizations to efficiently manage accountability for their health, safety and environmental programs. As a former Director of HSE Compliance for Johnson & Johnson, Hemingway is an internationally known expert on Health, Safety and Environmental management issues. ICS's internet/intranet management systems were fully developed over the past four years with technical assistance from the UMass Dartmouth faculty and students. The company counts among its clients Fortune Five Hundred companies as well as colleges and universities and the Department of Defense.

"We have found that Southeastern Massachusetts offers a wealth of talent, a comfortable life-style, and the infrastructure necessary to help us succeed. In relocating to the Advanced Technology Center, we are confident that we will continue to properly serve our customers, employees and investors," Hemingway said.

Business Contacts:

Tracey Dodenhoff, PTI
(508) 801-5127

John Miller, Micro Magnetics
(508)910-9842

Steve Hemingway or Dick Lambert,
International Compliance Systems, Inc
(508) 995-3082