Governor Pat Quinn visits Sivananthan Laboratories Inc., a high-tech business incubator, founded by Dr. Siva Sivananthan.

Governor Pat Quinn visited one of the best examples of Illinois entrepreneurship, Sivananthan Laboratories, Inc. (Labs), and its companies in Bolingbrook, IL, on Friday, September 21, 2012. The leadership of the Labs, Siva Sivananthan, and Chris Grein along with Raja Krishnamoorthi welcomed Governor Quinn side by side with dignitaries from the University of Illinois at Chicago (UIC) leadership, including Jennifer Woodard, Associate Vice Chancellor for Civic and Corporate Relations; Astrida Orle Tantillo, Dean of the College of Liberal Arts and Sciences (LAS); and Nancy Sullivan, Director of UIC’s Office of Technology Management.

Governor Quinn visited the Labs after hearing its accomplishments and the infrared industry in Illinois at the International Symposium on Optoelectronics and Material Devices ISOMD 2012, where he delivered the keynote address in Chicago on July 12, 2012. He was briefed on economic development and job creation activities at the Labs by Raja Krishnamoorthi, the President of the company, and on various projects that are being carried out at these facilities by Chris Grein, the Labs’ Chief Scientific Officer and a Professor of Physics at UIC. During a facility tour that followed the

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1 ISOMD 2012 was organized by a committee, whose members included Chris Grein, Siva Sivananthan, Yesim Anter, Timothy Gessert, Timothy Coutts representing various organizations such as the Microphysics Laboratory (MPL) at the Department of Physics at UIC, NREL, Episolar Inc. and Sivananthan Laboratories, Inc. For more information about this symposium please visit http://www.sivananthanlabs.us/symposium.html or http://physicsweb.phy.uic.edu/news/MPL/newsletter.php
company presentation, Governor Quinn met the staff and researchers of the Labs who gave demonstrations of the company’s current projects in the development of infrared cameras, radiation detectors, and biosensors.

**Institutional Partnership**

The Governor's visit to the Labs was significant not only in terms of bringing a spotlight to entrepreneurial achievements of UIC Physics faculty members but also showcasing the strong relationship between the Labs and its academic and educational partners, particularly with UIC.

Like the Governor, it was Dean Astrida Orle Tantillo's first visit to the Labs. “As Dean of the College of Liberal Arts and Sciences it was an honor and a pleasure to be able to share the achievements of one of our outstanding faculty members, Siva Sivananthan, and our alumni with Governor Quinn,” she said when asked about her observations from her visit. “I was delighted to visit Sivananthan Laboratories and to learn firsthand about its active role in building bridges between industry, academia, and government. The College of Liberal Arts and Sciences at UIC and Sivananthan Laboratories share a common belief in the importance of innovation, collaboration, and education for overcoming complex economical and scientific problems,” said Dean Tantillo highlighting priorities that are important to both institutions.

On the same topic, the Associate Vice Chancellor for Civic and Corporate Affairs at UIC, Jennifer Woodard, said, “I thought that the visit was a wonderful opportunity for Governor Quinn to see in person the groundbreaking work being done by the Labs and the profound implications for the translation of that work into technologies that are changing lives for the better: protecting our troops, making us all more secure, making energy sustainable and economical”. Mrs. Woodard had first met Dr. Sivananthan and heard about MPL’s accomplishments during a visit to MPL on March 2012. Since then she has become a strong supporter of MPL student and faculty.

2 The Sivananthan Labs employ 5 UIC Alumni, 4 of whom have Physics PhDs.
accomplishments, participating in various events that are organized by the MPL and its industry partners. “With his deep engagement with UIC and commitment to his students, Dr. Siva is responsible for remarkable advances in science and technology and ensuring that a new generation of scientists will follow in his footsteps,” said Mrs. Woodard as she expressed her appreciation of Dr. Sivananthan’s research, teaching and entrepreneurial skills.

Nancy Sullivan has a long-standing relationship with MPL, Labs and its companies due to her role as the Director of the Office of Technology Management at UIC. Indeed, at the 30th anniversary symposium that celebrated the creation of the UIC with the merger of the University of Illinois at Chicago Circle and the University of Illinois Medical Center 30 years ago, Mrs. Sullivan drew attention to Dr. Sivananthan’s accomplishments and those of his companies. She gave a presentation about UIC discoveries and innovations that have been changing the world to an audience that included Chancellor Allen-Meares, President Easter, former Presidents of University of Illinois, faculty, staff and many other dignitaries on September 19, 2012. During her presentation, she pointed out that the mercury cadmium telluride (MCT) semiconductor technology that Dr. Sivananthan helped pioneer since the mid-1980s contributed to the development and enhancement of the sensing and imaging technology that is employed by the night vision goggles that were used by the Navy Seals in the raid to Osama Bin Laden’s compound in Pakistan.

“It’s impressive how Sivananthan Laboratories is impacting our local economy. The opportunity to grow a partnership between UIC and Labs is impressive,” said Mrs. Sullivan when she was asked about partnership between UIC and the Labs. She further noted that the Governor’s visit highlighted the impact of this partnership not only for UIC and Labs but also for the local and national economy.

Partnership for Student Training
UIC Physics students, Eric Colegrove, Brian Kaster and Damaris Kroeber, were among others who were on-site during Governor’s visit. Eric Colegrove, who passed his preliminary Ph.D. oral exam on October 4, was there on site to train Brian Kaster on the use of close space sublimation (CSS) system, a thin film deposition system used to deposit polycrystalline cadmium telluride (CdTe) material for photovoltaic devices, as the Labs granted them access to the use of CSS system for training purposes. While the Governor was touring the facilities, Eric and Brian

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3 Information about the 30th year symposium can be found at http://www.uic.edu/index.html/Chancellor/UIC30.shtml and http://www.uic.edu/htbin/cgiwrap/bin/uicnews/articledetail.cgi?id=16669

4 Source: http://www.uic.edu/htbin/cgiwrap/bin/uicnews/articledetail.cgi?id=16688
were among others who found themselves meeting him in person during their scheduled experiments. Eric said his interaction with the Governor was brief, as he and Brian were just finishing up an experiment on the CSS. “We welcomed him into the CSS lab, but had just finished a process and as such we still had safety gloves and lab coats on,” said Eric about his welcoming experience. Eric has become quite familiar using the system due to his field of interest on the investigation of the effects of grain boundaries in polycrystalline CdTe through growth by molecular beam epitaxy on patterned substrates as well as due to his interaction with the Labs and its companies. “I was trained in the use of this system during my internships and subsequent employment at EPIR starting the summer of 2010 and ending after the summer of 2012”. The Labs and its companies work with students from UIC and other academic institutions on many training projects, exposing them to state-of-the-art facilities and furthering their interaction with the experts from national laboratories such as National Renewable Energy Laboratory of the U.S. Department of Energy.

The Impact
The Labs was formed in 2009 by Siva Sivananthan, the Director of MPL and a Professor of Physics at UIC, to act as a high-tech business incubator focused on promoting economic growth in Illinois and the United States. The UIC, the College of LAS and the Physics Department have long supported the Labs, EPIR Technologies Inc. (the Labs’ first success story), and the MPL, where its researchers, led by Siva Sivananthan, the Director of MPL since 1994, have pioneered the molecular beam epitaxy (MBE) growth of MCT since MPL’s inception in the early-1980s. The trio’s dedication to education, research, community service and job creation is a testament to their success. The recent announcement of the Advanced Chemical and Technology Building (ACTB)⁵ by the Governor on August 29, 2012 at UIC magnifies this long-standing and strong collaboration between UIC/LAS/Physics and Labs and ensures the continuation of their collective contributions to education, research and job creation here in Illinois.

⁵ Please visit following websites to read more coverage on the announcement of the ACTB at UIC, the new technology building, which will house state-of-the-art laboratory facilities, including those of MPL:
http://www.illinois.gov/PressReleases/ShowPressRelease.cfm?SubjectID=2&RecNum=10527
http://www.uic.edu/htbin/cgiwrap/bin/uicnews/articledetail.cgi?id=16608
Governor’s visit - Photo Collage.
Photo Credit: Roberta Dupuis-Devlin, UIC Photo Services

About Microphysics Laboratory, at the Department of Physics, University of Illinois at Chicago, IL, USA

The MPL at UIC is currently the only university laboratory in the U.S. performing fundamental research on MCT by MBE since its inception in early 1980s. It is a center for basic and applied physics research with an emphasis on II-VI materials and devices for infrared sensing and imaging and photovoltaic cells. Since 1982, MPL has been awarded over $30 million in external research support to develop better night vision and photovoltaic technology. Dr. Siva Sivananthan is the director of MPL since 1994 and has worked in semiconductors and

Undergraduate and graduate students of MPL. From top left to right: Alex Brown, Dustin Guidry, Peihong Man, Chris Buurma, Jin Hwan Park, Eric Colegrove, Brian Stafford, Brian Kaster and Tejumade Durowade (center).
infrared and night vision detector technology, helping to pioneer the synthesis of the now-dominant high-end infrared detecting/night vision semiconductor material, MCT. MPL’s research is focused on the optimization of the MBE growth of MCT, the study of in-situ/ex-situ doping and transport, and the growth of high quality alternative composite CdTe/Si substrates to be used for the growth of large area MCT. MPL’s fundamental research activities have resulted in the education of highly qualified and trained MCT scientists, who have transferred the lab’s knowledge base and traditions of excellence to the industry and government research agencies, such as the U.S. Army Night Vision Laboratory, and the U.S. Army Research Laboratory, DRS Technologies, Northrop Grumman, and Teledyne Scientific & Imaging. MPL consists of faculty, research members, students and staff. Currently seven graduate and two undergraduate students are working on-site and off-site on various research projects and thesis topics.