



Investing in the State of Innovation

Massachusetts Life Sciences Center Announces New Round of Cooperative Research Matching Grants

Grant recipients will use funding to research novel treatments for epilepsy, cystic fibrosis, sepsis and other conditions

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WALTHAM – The Massachusetts Life Sciences Center (MLSC), the quasi-public agency tasked with implementing the state's 10-year, \$1 billion Life Sciences Initiative, has announced the winners of the fourth round of its Cooperative Research Matching Grant Program.

The MLSC's Cooperative Research Matching Grants seek to increase industry-sponsored research at academic institutions in Massachusetts in order to accelerate scientific discoveries that lead to commercially-viable products and treatments. Under the program, applicants may receive up to \$500,000 over two years. The grants support research that could lead to life-saving therapies and commercialized products, and seek to further the goal of sustaining and growing the state's vital life sciences ecosystem.

"Collaboration is one of our greatest strengths in Massachusetts, and these grants will support new collaborations between two important parts of our life sciences ecosystem, our leading life sciences companies, and our world-class academic institutions," said Governor Charlie Baker. "As the global leader in life sciences and education, Massachusetts has a unique ability to improve patient care through innovation. I'm excited to see the results and the impact of these partnerships."

In this round, 28 applications were received. Following an initial round of peer review, 23 of those applications advanced to review by the MLSC's Scientific Advisory Board, which recommended the six finalists who were selected to receive funding totaling \$1,990,380.

The research partners that were authorized to receive Cooperative Research Matching Grants during the fourth round of this program are as follows:

Dr. Brian Wainger of Massachusetts General Hospital (grant amount: \$450,000) is partnering with GlaxoSmithKline to develop a cell-based personalized medicine platform to optimize selection of clinical trial subjects, create new diagnostics and generate novel medicines to treat diseases such as ALS. Funding from the MLSC will support the in vitro phenotypic analysis of study subject-derived motor neurons, to determine whether such analysis can predict clinical neurophysiological phenotype and the effects of the drug in study subjects.

Dr. Alexander Rotenberg of Boston Children's Hospital (grant amount: \$448,876) in collaboration with Neuroelectronics will conduct a randomized placebo-controlled trial to test whether cathodal transcranial direct current stimulation (tDCS) suppresses seizures in patients with focal seizures. The hypothesis for this research is that repeated daily sessions of cathodal tDCS will lead to a clinically significant decrease in seizures in patients with medically-refractory focal epilepsy. The field of epilepsy research has been turning steadily towards non-pharmacologic options such as focal brain stimulation. Non-invasive neurostimulation techniques, such as tDCS, are uniquely suited to mass distribution and treatment, even at home, as they are lightweight, portable, inexpensive and have a favorable safety profile.

Dr. Samuel Moskowitz of Massachusetts General Hospital (grant amount: \$191, 504), working in collaboration with EnBiotix, proposes to identify the optimal fumarate-tobramycin ratio and dosing of EBX-001 for the treatment of *P. aeruginosa* infections in cystic fibrosis patients. The regulatory route for EBX-001 is anticipated to be straight-forward given the "generally-recognized-as-safe" classification of fumarate and the great deal of safety and efficacy data that is available for tobramycin. EBX-001 has the potential to significantly reduce the impact of such infections in CF patients by improving mortality and quality of life.

Dr. Alexis Sauer-Budge of Fraunhofer (grant amount: \$225,000) is partnering with AdvanDx to propose the development of a rapid and low cost system for positively identifying the microbes causing sepsis, which would then lead to faster treatment. Sepsis accounts for 40% of all ICU costs, making it the most expensive condition treated in US hospitals. According to the federal Agency for Healthcare Research and Quality, sepsis cases cost more than \$20 billion to treat in 2011.

Dr. David Weitz of Harvard University (grant amount: \$450,000) proposes to develop a microfluidics platform for Droplet-based Microbial Inhibition Testing (Drop-MINT) to enable rapid identification of novel peptides and compounds with anti-microbial properties. If platform development is successful, the technology will be commercialized through a fee-for-service start-up company that will be headquartered in Massachusetts. Harvard's industry partner is BASF, which will have an option to invest in the start-up company via BASF Venture Capital.

Dr. David King of Massachusetts General Hospital (grant amount: \$225,000), in partnership, with Arsenal Medical proposes to work on the development of a self-expanding foam, ResQFoam, to treat severe abdominal hemorrhage. A key commercialization activity to move this promising technology from bench to point-of-injury is the development of a robust, hand-operated, portable delivery system for foam administration. Arsenal Medical intends to use safety and effectiveness findings from this grant as the basis for product development and regulatory submission of the foam for pelvic bleeding.

Through prior rounds, MLSC has awarded 12 Cooperative Research Matching Grants, totaling \$6.76 million. The grants are matched dollar-for-dollar by the respective industry partners involved with each collaboration.

“Not only are the life sciences an invaluable sector of our economy, first and foremost, they play a vital role in developing lifesaving treatments for patients,” said Senator Sal DiDomenico (D-Everett). “These grants from the Massachusetts Life Sciences Center will allow for collaborative research and innovation among the Commonwealth’s life sciences companies and first-rate academic institutions that will have a real impact on the lives of patients. I look forward to seeing the impact that these grants will undoubtedly have in patient care and discovery within life sciences.”

Since its inception, the program has funded research projects that have ranged from cardiac conditions, diabetes, HIV and lupus, to osteoarthritis, breast cancer and ALS.

One of those projects was a collaboration between Philips Healthcare, whose U.S. headquarters is located in Andover, MA, and the Martinos Center for Biomedical Imaging at Massachusetts General Hospital (MGH). A \$500,000 grant, matched by Philips, was awarded to MGH in 2011. Qianqian Fang, Ph.D., Assistant Professor in Radiology at Harvard Medical School and Assistant in Biomedical Engineering at MGH, is the Principal Investigator of a project aimed at developing a functional optical breast scanner that can be used in conjunction with any existing 2D x-ray mammography system to better diagnose breast cancer.

"After working closely with Philips engineers and managers over the past three years, we found ourselves in a much better position moving our technology to the next steps," said Fang. "We have identified the key barriers that our technology has to overcome and developed clear plans to address these issues. Together with the accumulated strong clinical results, we have positioned ourselves nicely on the verge of long-term development and scale-up of our technology. Without the timely and generous funding support from MLSC, all of this would not be possible."

About the Massachusetts Life Sciences Center

The Massachusetts Life Sciences Center (MLSC) is an investment agency that supports life sciences innovation, research, development, and commercialization. The MLSC is charged with implementing a 10-year, \$1-billion, state-funded investment initiative. These investments create jobs and support advances that improve health and wellbeing. The MLSC offers the nation’s most comprehensive set of incentives and collaborative programs targeted to the life sciences ecosystem. These programs propel the growth that has made Massachusetts the global leader in life sciences. The MLSC creates new models for collaboration and partners with organizations, both public and private, around the world to promote innovation in the life sciences. For more information, go to www.masslifesciences.com.

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