World-Leading Surgeons, Scientists and the Organ Preservation Alliance Applaud Defense Department Government Grant Programs Targeting Organ Banking

Department of Defense opens up the first-ever U.S. Government grant programs targeting advances in organ banking for transplants. Birth of a modern day Apollo Program to stop biological time of organs.

Moffett Field, CA (PRWEB) January 15, 2015 -- The Organ Preservation Alliance, a Silicon Valley nonprofit working to save millions of lives by catalyzing breakthroughs in the storage of organs, together with world-leading transplant surgeons and scientists on the Alliance’s medical and scientific advisory boards, jointly congratulate the U.S. Department of Defense (DoD) on its announcement of the first-ever multi-million dollar grant funding pools dedicated to research on organ and tissue banking technologies.

The DoD will today, via its Tissue Injury and Regenerative Medicine (TIRM) program office open three separate, but complementary, organ cryopreservation grant programs. These programs could together fund research for 20 or more leading American research teams, with strong, individual teams potentially receiving $3-3.5 million across different phase 1 and 2 awards. These business innovation (SBIR) grants are aimed to support U.S. commercialization of science while achieving military as well as civilian health goals.

Sebastian Giwa, PhD, President and CEO of the Organ Preservation Alliance and also speaking for New Organ, said: “This bold step by the DoD will enable the crucial breakthroughs needed to create a future in which we can stop biological time for human organs, in much the way that we have, for decades, been able to bank stem cells, human eggs, sperm, and embryos.”

“35% of all deaths in the U.S. could be prevented or substantially delayed by organ transplantation, and this move by the DoD could be a true game changer.”

Need for Organs is Vast, DoD Funding Could Transform Transplantation and Save Millions of Lives

“The supply of tissues is one of the major constraints we face in transplantation medicine today, and organ banking technology would dramatically help resolve it. This is a major step forward in the field of transplantation,” said Harvard Medical School Professor Bohdan Pomahac.

“Currently, transplant organs cannot be stored for long at all, so a high percentage of viable transplant organs are discarded before matches can be found and helicopter and jet transportation can be arranged. Hearts, for instance, can currently only survive for 4-5 hours outside of a body,” said world-leading heart transplant surgeon, Professor Jacob Lavee. “If we could get longer preservation, so that just half of the wasted hearts and lungs could be used, the U.S. wait-list for these organs would be extinguished in a few years.”

Dr. Gerald Brandacher, Scientific Director of the Composite Tissue Allotransplantation Program at Johns Hopkins heralded this commitment: “People seem to underestimate what could be coming. This is a big step towards a future in which we routinely replace damaged organs and tissues to restore both form and function, in a way that only transplantation allows – replacing ‘like with like’.”
The DoD’s Three Separate, but Complementary, Grant Programs are Designed to Catalyze Audacious Breakthroughs

The three new DoD grant programs target different, but related, problems in the field. The first program aims to develop fundamental breakthroughs in the low-temperature physics underlying the preservation of living tissues; the second programs focuses on low toxicity cryoprotectants that prevent ice formation in cooled organs; and the third program targets effective and fast rewarming protocols to ‘out-warm’ the ice crystallization process and for restoring function to cooled organs.

“At first look, the challenge of reversible banking of human organs seems daunting, but it can be broken down into a set of tractable sub-problems, each with many potential solutions. The different topics that the DoD is asking scientists to work on, to a large extent cover the set of different sub-challenges that need to be overcome,” said leading cryobiologist, Professor Boris Rubinsky at UC Berkeley.

The head of the DoD group that runs these programs, Kristy Pottol, project manager for the Tissue Injury and Regenerative Medicine Project Management Office at the U.S. Army Medical Materiel Development Activity said: “In the context of the important investments the DoD is making in tissue engineering via the Armed Forces Institute of Regenerative Medicine (AFIRM), and the investments in the world’s largest hand and face transplant program, this investment in tissue banking should not only add value on its own by improving current transplantation practices, but could also help support, complement and accelerate tissue engineering breakthroughs.”

Military as well as Civilian Needs Outside of Vital Organs are Immense

“The DoD’s decision to support tissue cryopreservation research is critical to restoring the health and function of our brave service members,” said world-leading cryobiology scientist Mehmet Toner, Professor at Harvard, Mass General and MIT.

"Progress in cryobanking would be game-changing and would enable our ever-improving transplantation abilities to help maimed American servicemen, as well as firefighters, factory workers, or civilians and children around the world injured by landmines,” said Dr. W.P. Andrew Lee, who performed the nation’s first military double-arm transplants and is Director of the Department of Plastic & Reconstructive Surgery at Johns Hopkins.

Dr. Lee’s colleague, Dr. Pomahac at Harvard said: “In addition to scarce availability of vital organs like heart and kidneys, there is a tremendous lack of vascularized composite tissues for transplantation, trauma, reconstructive and regenerative medicine needs. Over 1,600 service members have suffered amputations from injuries in Iraq and Afghanistan and over 4,000 Service members have sustained severe craniomaxillofacial injuries. Being able to bank complex vascularized tissue would revolutionize the way we can restore these brave young women and men who serve our country.”

At the same time that the number of catastrophic combat injuries to limbs and face is unacceptably high, civilian need for solutions to amputations is even greater: “Two million people are living with limb loss in the U.S., with 185,000 amputations conducted each year. Approximately 100,000 of those amputations stem from vascular disease and/or diabetes, and roughly 83,000 are due to trauma, often in young individuals,” Dr. Lee added.
ABOUT THE ORGAN PRESERVATION ALLIANCE AND NEW ORGAN

The Organ Preservation Alliance is a non-profit incubated at SU Labs at NASA Research Park in Silicon Valley, which is working to catalyze breakthroughs on the remaining obstacles towards the long-term storage of organs by building on recent advances in cryobiology and relevant fields.

These breakthroughs will save and enrich the lives of millions; they will also accelerate progress towards breakthroughs in organ tissue engineering. Innovation in these technologies will enable cryobanked, tissue-engineered organs to be available off-the-shelf and on-demand, eventually revolutionizing human health.

The Organ Preservation Alliance is a Founding Partner of New Organ, a collective impact initiative working to address organ disease and injury by coordinating a shared roadmap, prize portfolio, and alliance to catalyze breakthroughs in organ banking, bioengineering, and regeneration.

View the press kit at www.organpreservationalliance.org/s/presskit-DoD-Programs.pdf.
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