



News Release

Defense Advanced Research Projects Agency

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3701 North Fairfax Drive
Arlington, VA 22203-1714

IMMEDIATE RELEASE

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DARPA INITIATES REVOLUTIONARY PROSTHETICS PROGRAMS

The Defense Advanced Research Projects Agency (DARPA) has initiated its efforts to revolutionize prosthetic devices for amputee soldiers. DARPA's prosthesis programs are part of the Department of Defense's goal to provide the most advanced medical and rehabilitative technologies for military personnel injured in the line of duty.

The Applied Physics Laboratory of the Johns Hopkins University, Baltimore, Md., received \$30.4 million in funding for the Revolutionizing Prosthetics 2009 program. Over the next four years, researchers will create a mechanical arm that has the properties of a biological limb. With this new prosthetic, an upper extremity amputee would be able to feel and manipulate objects as that person would with a native hand. Research will focus mainly on advanced neural control strategies to allow the user to operate the arm in a near-biological manner. In addition, the program will develop new power, actuation, and robotic control technologies and fabricate advanced sensors.

In addition to this longer term activity, DARPA is also sponsoring the Revolutionizing Prosthetics 2007 program, which will incorporate the best possible technologies and the most revolutionary short-term developments into a highly advanced, neurally interfaced prosthetic arm that will be ready for clinical trials within two years. Team-lead Integrated Solutions Division, DEKA Research and Development Corp., Manchester, N.H., received \$18.1 million in funding for the Revolutionizing Prosthetics 2007 program. DEKA will be working with researchers and clinicians at Rehabilitation Institute of Chicago, Chicago PT LLC, Liberating Technologies Inc., University of New Brunswick Institute of Biomedical Engineering, and Northwestern University.

In this two-year effort, researchers will focus on some of the more difficult mechanical aspects of providing near-human strength in a prosthetic limb, and will create customizable methods of manufacturing a cosmetic covering that will allow the amputee a prosthetic arm that is both functional and similar in appearance to his or her native limb.

"Although our warfighters suffer fewer fatalities, they still suffer horrible injuries. And today one of the most devastating battlefield injuries is loss of a limb. At DARPA, we have the vision of a future where a soldier who has lost an extremity in battle will regain full use of that limb again. We will get to this future by making revolutionary, neurally controlled prosthetics," explained Col. Geoff Ling, M.D., Ph.D., DARPA program manager for the Revolutionizing Prosthetics programs. "We will do whatever is necessary to restore these people who have given

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up so much for the idea of freedom and in service to their country. Taken together, these two programs will advance the state of the art in prosthetics while delivering an advanced upper extremity prosthetic device in two years.”

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Media with questions, please contact Jan Walker, (703) 696-2404, or [jan.walker\[at\]darpa.mil](mailto:jan.walker@darpa.mil).
Contractors or military organizations, contact Col. Geoff Ling, (571) 218-4674.