



## New and Continuing Joint Strategic Research Initiatives at DU and DUCOM

**Bionanotechnology:** Development of sensors, therapeutics, and materials that are non-toxic to humans and will be used to prevent, detect, and treat disease. Nanotechnology funding presently comes through Ben Franklin Partners from the Commonwealth of Pennsylvania Department of Community and Economic Development. Seeking new funding from the U.S. Department of Defense and U.S. Department of Energy

**Biodefense:** Development of technologies that enable first responders and emergency medicine physicians to detect and effectively respond to a bioweapon attacks. Present funding from the Department of Defense and Department of Transportation. Seeking additional funds from the Department of Defense and new funding from the U.S. Department of Homeland Security, National Institutes of Health (DHHS), and the Commonwealth of Pennsylvania. {Biomed, }

**Bioinformatics:** Development of the next generation of bioinformatics instrumentation and software that will be crucial for 1) increasing the capability to perform genomics and proteomics research and 2) producing useful treatment protocols by enabling large amounts of clinical and laboratory data to be rapidly and effectively analyzed. Research in pathoinformatics and clinical trials are being pursued with Oracle Corporation. Joint bioinformatics research being developed with the U.S. Department of Agriculture. New funding for genomics and proteomics research is being sought from the U.S. Department of Defense, National Institutes of Health (DHHS), and the U.S. Department of Agriculture.

**Neuroengineering:** Programs in neurocontrol and neurorobotics are presently working together to identify brain signals that regulate control over limb movements. These brain signals are being identified by mathematical algorithms and used to control the movement of neuroprotheses. New funding is being sought from the Department of Defense and the National Institutes of Health.

**Brain and Cognitive Sciences:** The goal of this program is to utilize technical and theoretical advances to develop and assess technologies for optimizing brain function with the goal of enhancing human cognition and performance. Funding is being sought from the U.S. Department of Defense and National Institutes of Health (DHHS).

**Skin Research:** Near Infrared Spectroscopy is utilized to monitor tissue healing in diabetic patients in a collaborative project between the School of Biomedical Engineering, Science and Health Systems and the Surgery Department. This joint effort is sponsored by the Department of Defense, the State of PA and Johnson and Johnson.