



[National Institute of Allergy and Infectious Diseases \(NIAID\)](#)

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NIAID Awards \$47 Million in New Effort to Develop Medical Countermeasures Against Radiological and Nuclear Threats

The National Institute of Allergy and Infectious Diseases (NIAID) has issued more than \$47 million for grants, contracts and interagency agreements as part of a new National Institutes of Health (NIH) research program on Medical Countermeasures Against Radiological and Nuclear Threats. This program emphasizes product development and seeks to develop preventions and treatments for radiation sickness following a terrorist attack.

“Radiological ‘dirty bombs’ or nuclear explosive devices are among the potential terrorist threats Americans face. Our new medical countermeasures program will help protect the public from radiation should such an attack ever occur,” says NIAID Director Anthony S. Fauci, M.D.

NIAID is the lead institute at NIH for the development of biodefense countermeasures. Its research portfolio includes many in-depth studies of the immune system, which is especially vulnerable to radiation. For these reasons, the Department of Health and Human Services asked NIAID to coordinate and lead the development of a robust NIH research program on medical countermeasures to radiation.

Funding for this program is from the Department of Health and Human Services Office of Public Health Emergency Preparedness. Twelve grants, four contracts and two interagency agreements have recently been formalized through this new NIH research program. While each award has a specific focus connected to product development or basic research, the sum of the efforts covers the necessary components to develop medical countermeasures from concept through licensure.

Centers for Medical Countermeasures Against Radiation

Eight universities or research institutes have received grants to establish Centers for Medical Countermeasures Against Radiation. These centers will focus on basic and applied research to develop new products for measuring radiation exposure, to protect against exposure and to minimize and treat the effects of exposure to a wide range of radioactive compounds.

“The primary goal of the centers is to develop new medical products that would be needed in the event of radiation released in a terrorist attack. We are asking the centers to develop biodosimetry products to measure radiation exposure, therapeutics to treat short-term and long-term symptoms of radiation exposure, as well as products that can prevent or mitigate the effects of radiation exposure,” says NIAID program officer Narayani Ramakrishnan, Ph.D.

Each center will be led by a principal investigator and may include a consortium of other research institutions. Funding for the centers totals about \$28.7 million for fiscal year 2005. NIAID plans to fund the centers for five years. The principal investigators and approximate funding for fiscal year 2005 for each center are as follows:

- Paul Okunieff, M.D., University of Rochester Medical Center, Rochester, NY, \$4.3 million
- David J. Brenner, Ph.D., D.Sc., Columbia University Medical Center, New York, NY, \$5.0 million
- Nelson J. Chao, M.D., Duke University, Durham, NC, \$4.4 million
- George Georges, M.D., Fred Hutchinson Cancer Research Center, Seattle, WA, \$4.5 million

- John Moulder, Ph.D., Medical College of Wisconsin, Milwaukee, WI, \$3.7 million
- William H. McBride, Ph.D., D. Sc., University of California, Los Angeles, CA, \$2.8 million
- Alan D. D'Andrea, M.D., Dana-Farber Cancer Institute, Boston, MA, \$2.0 million
- Joel S. Greenberger, M.D., University of Pittsburgh, \$2.0 million

Accelerated Product Development Grants for Radiation Countermeasures

NIAID awarded a smaller set of grants to four other research organizations to support projects focused on protecting the immune system from radiation or restoring the immune system following radiation exposure. Products that provide pre-exposure protection could be used by first responders to prevent bone marrow damage, while post-exposure products would help restore immune system cells that are formed within bone marrow. These 18-month accelerated product development awards total \$4.0 million:

- Andrei Gudkov, Ph.D., D.Sc., Cleveland BioLabs, Inc., Cleveland, OH, \$1.5 million
- George Georges, M.D., Fred Hutchinson Cancer Research Center, Seattle, WA, \$1.5 million
- Amelia Bartholomew, M.D., University of Illinois at Chicago, Chicago, IL, \$500,000
- Thomas MacVittie, Ph.D., University of Maryland School of Medicine, Baltimore, MD, \$500,000

Contracts for the Development of Radiation Countermeasures

Two universities and two companies are receiving contracts for developing medical countermeasures products. The largest of these contracts, Medical Countermeasures Against Radiological Threats: Product Development Support Services, was awarded to the University of Maryland School of Medicine. The university will receive about \$9.3 million in fiscal year 2005. NIAID plans to fund this contract for five years to evaluate promising compounds to prevent, reduce or treat symptoms of radiation exposure. For example, under the contract, the university may develop products to protect first responders, speed healing of bone marrow, measure radiation exposure and decontaminate the body following exposure. Because different types of radiation and differing levels of exposure can damage the body in a variety of ways, an assortment of medical products are needed, explains Bert Maidment, Ph.D., NIAID associate director for product development for radiological and nuclear countermeasures.

The University of Kentucky, Lexington, Nanotherapeutics of Alachua, FL, and SRI International of Menlo Park, CA, also are receiving contracts for Development of Improved DTPA for Radionuclide Chelation. DTPA (short for the chemical diethylenetriaminepentaacetate) can be used to remove certain radioactive compounds from the body. If a person is exposed to one of these compounds, DTPA can be given intravenously to help eliminate the contamination. For use following a terrorist attack, however, DTPA would be practical only in an easier-to-administer form. The contractors will seek to develop alternate ways to effectively administer DTPA, either by inhalation, oral liquid or pill.

NIAID has awarded 14-month contracts with renewal options to

- University of Kentucky, \$816,115
- Nanotherapeutics, Inc., \$776,314
- SRI International, \$931,123

Interagency Agreements

NIAID also has signed interagency agreements with two other federal government research institutes, the Armed Forces Radiobiology Research Institute (AFRRI) and the National Cancer Institute (NCI), both of Bethesda, Maryland. Under these agreements, AFRRI received \$1.3 million in 2005 to screen and evaluate compounds that could be used to prevent, mitigate or treat the effects of radiation exposure. AFRRI also will develop an automated approach to the assay of blood cell chromosome damage used to measure a person's radiation exposure.

NCI, also part of the National Institutes of Health, received \$1 million through a 2005 interagency agreement to develop compounds to protect against radiation exposure; conduct epidemiological studies on the medical consequences of radiation exposure; and identify compounds the body produces when exposed to radiation.

To learn more about the NIAID research program on medical countermeasures against radiological and nuclear threats, visit the

program's Web site, <http://www3.niaid.nih.gov/research/topics/radnuc/>.

News releases, fact sheets and other NIAID-related materials are available on the NIAID Web site at <http://www.niaid.nih.gov>.

NIAID is a component of the National Institutes of Health, an agency of the U.S. Department of Health and Human Services. NIAID supports basic and applied research to prevent, diagnose and treat infectious diseases such as HIV/AIDS and other sexually transmitted infections, influenza, tuberculosis, malaria and illness from potential agents of bioterrorism. NIAID also supports research on transplantation and immune-related illnesses, including autoimmune disorders, asthma and allergies.

The National Institutes of Health (NIH) — *The Nation's Medical Research Agency* — includes 27 Institutes and Centers and is a component of the U. S. Department of Health and Human Services. It is the primary Federal agency for conducting and supporting basic, clinical, and translational medical research, and it investigates the causes, treatments, and cures for both common and rare diseases. For more information about NIH and its programs, visit <http://www.nih.gov>.



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