



**DEPARTMENT OF DEFENSE**

**CONGRESSIONALLY DIRECTED MEDICAL RESEARCH PROGRAMS**

**ANNUAL REPORT**

**SEPTEMBER 30, 2005**

**U.S. ARMY MEDICAL RESEARCH AND MATERIEL COMMAND**

Congressionally Directed Medical Research Programs

ATTN: MCMR-ZB-C

1077 Patchel Street

Fort Detrick, MD 21701-5024

Phone: (301) 619-7071

Fax: (301) 619-7796

<http://cdmrp.army.mil>





DEPARTMENT OF THE ARMY  
US ARMY MEDICAL RESEARCH AND MATERIEL COMMAND  
504 SCOTT STREET  
FORT DETRICK, MARYLAND 21702-5012

REPLY TO  
ATTENTION OF:

September 30, 2005

Office of the Commanding General

Dear Colleagues:

The US Army Medical Research and Materiel Command (USAMRMC) protects and enhances the health of service members and their families through initiatives in many areas. The USAMRMC supports medical research, advanced technology and product development, medical logistics and health facilities planning, and medical information management. The USAMRMC's expertise in these vital areas helps maintain the capabilities required by the Army to fight and win on the battlefield. At the same time, its efforts ensure continued access of the warfighter and the military family to high-quality and cost-effective health solutions.

The USAMRMC also has been entrusted by Congress to manage special biomedical research initiatives that aim to improve the health of all individuals. Several of these programs are managed through the Office of the Congressionally Directed Medical Research Programs (CDMRP). The CDMRP was created in 1993 when Congress, in response to grassroots lobbying efforts by the breast cancer consumer advocacy community, tasked the Army with developing and managing an innovative breast cancer research program. Since its inception, the CDMRP's mandate has expanded to include peer reviewed research programs in prostate and ovarian cancer, neurofibromatosis, chronic myelogenous leukemia, tuberous sclerosis complex, military health and readiness, and other areas of congressional interest.

This 2005 Annual Report summarizes the CDMRP's history, management strategies, and key outcomes. The CDMRP arose from a unique partnership among the government, the military, and the American public. Thus, it is fitting that its continued success is due to the maintenance of this partnership as well as the establishment of new collaborations with other funding agencies, scientists and clinicians, and consumer advocates. As described in this report, the CDMRP supports innovative research by both individual investigators and collaborative teams, attracts and trains new investigators of diverse backgrounds who have the potential to revolutionize disease prevention and treatment, and fosters the development of products to improve clinical care and public health. This multifaceted approach ensures that the CDMRP will continue to make great strides toward the ultimate goal of eradicating disease.

Sincerely,

A handwritten signature in black ink, appearing to read "Eric B. Schoomaker".

Eric B. Schoomaker, M.D., Ph.D.  
Brigadier General, U.S. Army  
Commanding General





DEPARTMENT OF THE ARMY  
US ARMY MEDICAL RESEARCH AND MATERIEL COMMAND  
1077 PATCHEL STREET  
FORT DETRICK, MARYLAND 21702-5012

REPLY TO  
ATTENTION OF:

September 30, 2005

## Congressionally Directed Medical Research Programs

Dear Colleagues:

In the nearly 35 years since the passage of the 1971 National Cancer Act, substantial advances have been made in the prevention, diagnosis, and treatment of cancer and other diseases. However, there is still a critical need for research directed toward curing diseases that exert a significant toll on individuals, families, and society in general. The Department of Defense (DOD) Office of the Congressionally Directed Medical Research Programs (CDMRP) has become a leader in funding innovative, scientifically meritorious research in cancer, neurofibromatosis, tuberous sclerosis complex, and other targeted areas. The CDMRP seeks to complement other funding agencies by sponsoring targeted research that addresses novel or understudied areas, training early-career investigators, and recruiting scientists in other fields who are interested in sharing their expertise and expanding their research. This 2005 annual report highlights the programs that are currently being managed by the CDMRP.

The CDMRP was created in response to the efforts of a national grassroots campaign by breast cancer advocacy groups, which led to an appropriation of \$25 million (M) by Congress in fiscal year 1992 (FY92) for breast cancer research. An additional \$210M was appropriated in FY93 for a "peer reviewed breast cancer research program with the Department of the Army as executive agent." Based on recommendations from a 1993 Institute of Medicine (IOM) report, the CDMRP developed a unique proposal review model consisting of peer review, which assesses scientific and technical merit, and programmatic review, which evaluates innovation and relevance to the program's goals.

Since FY93, the CDMRP has managed 54 programs totaling almost \$3.4 billion (B) in congressional appropriations. These include seven core programs that focus on breast cancer, prostate cancer, ovarian cancer, chronic myelogenous leukemia, neurofibromatosis, tuberous sclerosis complex, and military health and readiness. Each of these programs is executed according to the two-tier model outlined in the 1993 IOM report. Consumer advocates are an integral part of the review process, serving as full voting members on both peer and programmatic review panels. I believe that the partnership of consumer advocates, scientists, clinicians, policymakers, the DOD, and the public is vital to the success of the programs managed by the CDMRP.

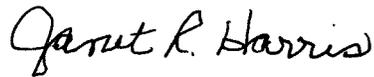
I would like to express my deepest gratitude to the following individuals for their participation in the CDMRP:

- Disease survivors, their family members, and consumer advocates whose courage and commitment led to the creation of these programs. These individuals continue to infuse the CDMRP with passion, inspiration, and vision.

- The scientists and clinicians funded by the CDMRP who are dedicated to improving the health and quality of life of all people. They are our greatest hope for preventing, controlling, and curing disease.
- The scientists, clinicians, and consumer advocates who have served on the CDMRP's Integration Panels (i.e., advisory committees) and have crafted comprehensive programs over the past 13 years. The dedication and skill of these panel members are evidenced by their many accomplishments, which include setting investment strategies and conducting annual programmatic reviews of proposals.
- Members of the CDMRP's peer review panels, who have met the daunting task of reviewing more than 34,000 proposals since FY93. Without their expertise and perseverance, our vision of finding and funding the best research would not be realized.
- The many members of the DOD, the U.S. Army Medical Research and Materiel Command, the CDMRP Program Management Teams, and support staff whose constant enthusiasm and diligence sustain the research programs on a daily basis.

I am grateful for the integrity, vision, and devotion shown by these dedicated individuals. They have crafted innovative and vital programs that continue to forge new pathways in the management and execution of medical research.

Sincerely,

A handwritten signature in black ink that reads "Janet R. Harris". The signature is written in a cursive, flowing style.

Janet R. Harris, Ph.D., R.N.  
Colonel, US Army Nurse Corps  
Director

**EXECUTIVE SUMMARY ..... ix**

**I. OVERVIEW OF THE CDMRP**

Programs Managed by the CDMRP .....I-2  
Program Execution and Science Management.....I-5  
Early Program Planning.....I-5  
Program Development and Execution.....I-6  
Grants Management.....I-6  
Program Evaluation.....I-7  
Research Information Dissemination.....I-9

**II. CDMRP ACCOMPLISHMENTS**

Leveraging Funding to Cure Disease.....II-1  
Leveraging People to Cure Disease.....II-1  
Leveraging Science Management to Cure Disease.....II-4  
Leveraging Ideas to Cure Disease.....II-6  
Leveraging Collaborations to Cure Disease.....II-7  
Leveraging Technology for Product Development to Cure Disease.....II-12  
Shaping Tomorrow.....II-13  
In the News – Era of Hope.....II-13

**III. CDMRP PRODUCTS**

Animal Models of Disease.....III-5  
Biomarkers.....III-6  
Detection and Diagnostic Tools.....III-10  
Pharmacologic and Therapeutic Interventions.....III-13  
Products to Improve Military Health and Readiness.....III-18  
Looking Ahead.....III-22  
In the News.....III-22

**IV. BREAST CANCER RESEARCH PROGRAM**

Program Background.....IV-1  
The Fiscal Year 2004 Program.....IV-2  
The Vision for the Fiscal Year 2005 Program.....IV-3  
Scientific Outcomes and Advances.....IV-4  
Fiscal Year 2005 Integration Panel Members.....IV-10  
The Stamp Out Breast Cancer Act.....IV-11  
BCRP Research in the News.....IV-16  
Bottom Line.....IV-19

**V. PROSTATE CANCER RESEARCH PROGRAM**

Program Background.....V-1  
The Fiscal Year 2004 Program.....V-1  
The Vision for the Fiscal Year 2005 Program.....V-3  
Scientific Outcomes and Advances.....V-3  
Fiscal Year 2005 Integration Panel Members.....V-11  
PCRP Research in the News.....V-15  
Bottom Line.....V-17

**VI. NEUROFIBROMATOSIS RESEARCH PROGRAM**

Program Background.....VI-1  
The Fiscal Year 2004 Program.....VI-2  
The Vision for the Fiscal Year 2005 Program.....VI-3  
Scientific Outcomes and Advances.....VI-4  
Fiscal Year 2005 Integration Panel Members.....VI-6  
NFRP Research in the News.....VI-6  
Bottom Line.....VI-13

**VII. OVARIAN CANCER RESEARCH PROGRAM**

Program Background.....VII-1  
The Fiscal Year 2004 Program.....VII-1  
The Vision for the Fiscal Year 2005 Program.....VII-2  
Scientific Outcomes and Advances.....VII-3  
Fiscal Year 2005 Integration Panel Members.....VII-6  
OCRP Research in the News.....VII-7  
Bottom Line.....VII-9



## VIII. PEER REVIEWED MEDICAL RESEARCH PROGRAM

|   |        |
|---|--------|
| Program Background .....                                      | VIII-1 |
| The Fiscal Year 2004 Program .....                            | VIII-2 |
| The Business Strategy for the Fiscal Year 2005 Program .....  | VIII-3 |
| Scientific Outcomes and Advances.....                         | VIII-4 |
| Fiscal Year 2005 Joint Programmatic Review Panel Members..... | VIII-6 |
| Bottom Line.....  | VIII-7 |

## IX. CHRONIC MYELOGENOUS LEUKEMIA RESEARCH PROGRAM

|  |      |
|--|------|
| Program Background .....                         | IX-1 |
| The Fiscal Year 2004 Program .....               | IX-1 |
| The Vision for the Fiscal Year 2005 Program..... | IX-2 |
| Scientific Outcomes and Advances.....            | IX-2 |
| Fiscal Year 2005 Integration Panel Members ..... | IX-4 |
| Bottom Line .....                                | IX-6 |

## X. TUBEROUS SCLEROSIS COMPLEX RESEARCH PROGRAM

|  |     |
|--|-----|
| Program Background .....                         | X-1 |
| The Fiscal Year 2004 Program .....               | X-1 |
| The Vision for the Fiscal Year 2005 Program..... | X-2 |
| Scientific Outcomes and Advances.....            | X-3 |
| Fiscal Year 2005 Integration Panel Members ..... | X-4 |
| Bottom Line .....                                | X-8 |

## XI. OTHER PROGRAMS MANAGED BY THE CDMRP

|  |       |
|--|-------|
| 3D Imaging and Genomic Analysis for Breast Cancer Management.....      | XI-1  |
| Advances in Breast Cancer Therapy.....                                 | XI-3  |
| Alcoholism Research .....  | XI-3  |
| Cancer Vaccine Research.....   | XI-4  |
| Cancerous Brain Tumors Drug Research.....                              | XI-5  |
| Center for Prostate Disease Research .....                             | XI-5  |
| Comprehensive Bioactive Products for Breast Cancer Research.....       | XI-6  |
| Computer-Assisted Cancer Device .....                                  | XI-7  |
| Diagnostic and Therapeutic Cancer Care Equipment.....                  | XI-7  |
| Donor Cord Blood Demonstration .....                                   | XI-8  |
| Electrical Impedance Scanning Device.....                              | XI-8  |
| Gallo Cancer Center .....  | XI-9  |
| Genetic Cancer Research.....   | XI-9  |
| Genomic Medicine and Gene Therapy.....                                 | XI-10 |
| Life Sciences Research Initiative .....                                | XI-11 |
| Lung Cancer Research .....   | XI-11 |
| Molecular Medicine .....   | XI-12 |
| Muscle Research Consortium.....  | XI-12 |
| Muscular Dystrophy Research.....                                       | XI-13 |
| Myeloproliferative Disorders Research.....                             | XI-14 |
| National Prion Research .....  | XI-14 |
| Neurogenetic Research and Computational Genomics.....                  | XI-15 |
| Neutron Therapy Research .....   | XI-15 |
| Orphan Disease Drug Discovery Research .....                           | XI-16 |
| Pediatric Brain Tumor and Neurological Disease Research.....           | XI-16 |
| Pediatric Hospice .....  | XI-16 |
| Preventive Medicine Research Institute .....                           | XI-17 |
| Preventive Medicine Research for Prostate Cancer.....                  | XI-17 |
| Spinal Muscular Atrophy Research.....                                  | XI-18 |
| Targeted Nano-Therapeutic for Advanced Breast and Prostate Cancer..... | XI-18 |
| Tripler Cancer Care .....  | XI-19 |
| Veterinary Manpower Development .....                                  | XI-19 |

|  |     |
|--|-----|
| Appendix A - Fiscal Years 1992–2004..... | A-1 |
|--|-----|

|  |     |
|--|-----|
| Appendix B - Fiscal Years 2004–2005..... | B-1 |
|--|-----|

|  |     |
|--|-----|
| Appendix C - USAMRMC Office of the Congressionally Directed<br>Medical Research Programs Staff ..... | C-1 |
|--|-----|

|  |     |
|--|-----|
| Appendix D - Acronyms and Abbreviations..... | D-1 |
|--|-----|

