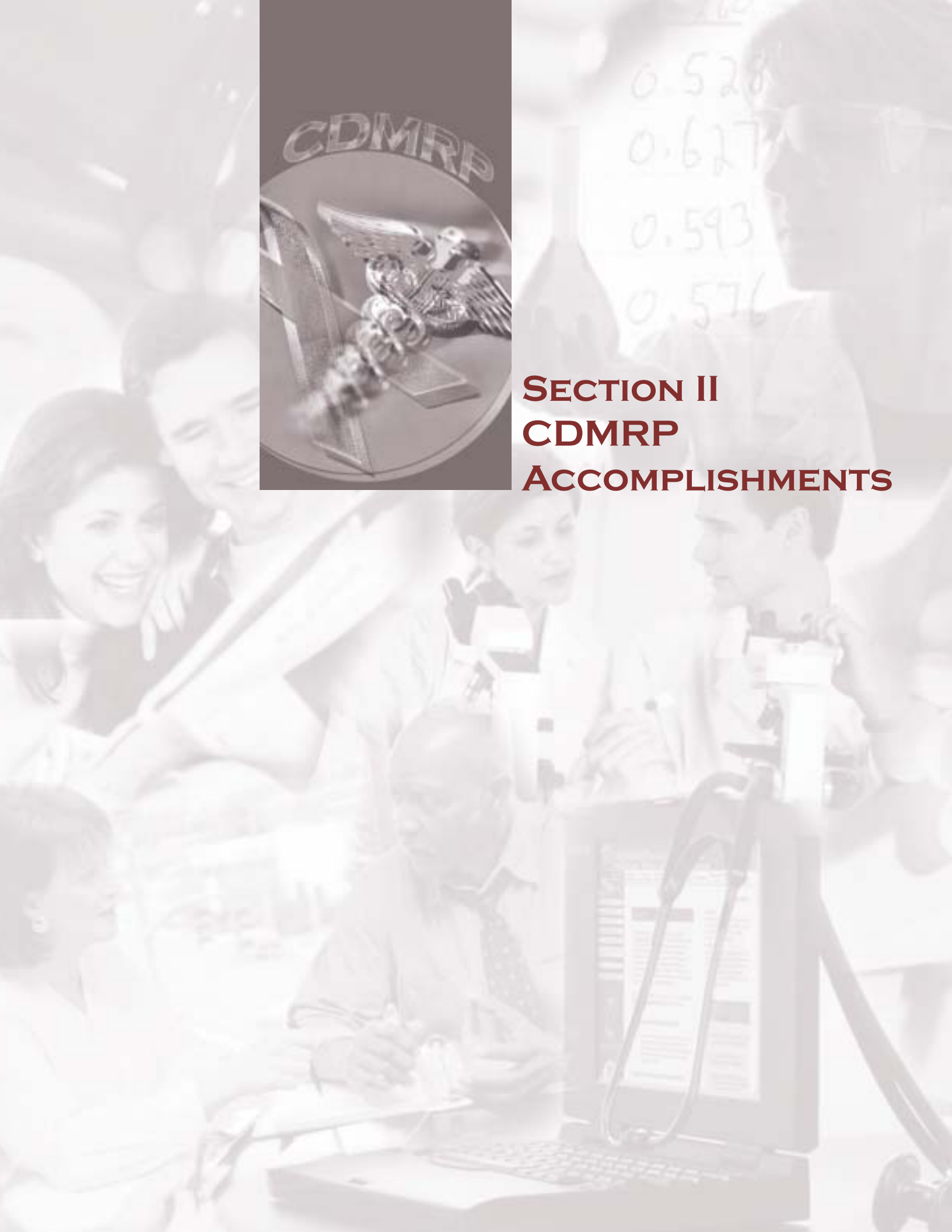




**SECTION II
CDMRP
ACCOMPLISHMENTS**



BACKGROUND

The Congressionally Directed Medical Research Programs' (CDMRP) vision is to be the preferred and responsive source for accessible research funding, shaping the future of health care to prevent, control, and cure diseases. To meet this vision, the CDMRP has made advances in management execution strategies, development of innovative award mechanisms, and community outreach and communication strategies. As a result of these efforts, the CDMRP serves as a national and international model for reinventing science administration.

The CDMRP can report accomplishments in four broad areas. The first area is advancement in management execution strategies. These practices emphasize the CDMRP's efforts to

"It has been a unique distinction and pleasure to be a part of this national level federal government program providing research funding for ultimate cure of deadly diseases like breast, prostate, and ovarian cancer. Being trained in medicinal chemistry with special emphasis on cancer research, I have enjoyed every single day at this office contributing in the grants management arena with a hope of making a difference in the lives of many people suffering from these diseases. Each morning I come to this job with a sense of commitment to help those scientists out there working toward a common goal to conquer these diseases."

—Nrusingha C. Mishra, Ph.D.,
Grants Manager, CDMRP

streamline program execution to simplify the award submission, review, and funding processes for applicants. The second area is CDMRP's commitment to provide award opportunities that represent areas of highest priority and greatest need. The third accomplishment represents strategies in community outreach and communication, ensuring that newly discovered advances and opportunities in medical research are made available to the scientists, consumers, Congress, military, and public at large. Finally, the fruits of the first three accomplishments result in the fourth area of accomplishment – scientific achievements arising as a result of the research supported by CDMRP awards. For information on research accomplishments related to specific programs, see Sections III–XI.

ADVANCES IN MANAGEMENT EXECUTION STRATEGIES

The CDMRP has been a pioneer in exploring innovative program management processes, many of which are now being adopted by other funding agencies. The innovative execution processes that have been developed and implemented in the past year have dramatically facilitated the award submission, review, and funding processes for applicants.



Electronic Proposal Submission and Review

To streamline program management, the CDMRP is committed to moving from paper-based to electronic-based processes and has made several innovative advancements in this area (see related box story on next page). Following the successful electronic submission and review of proposals in FY01 for the Neurofibromatosis Research Program, in FY02, the CDMRP implemented an electronic submission and review process for almost all of its programs. Applicants were required to electronically submit their proposal as a Portable Document Format file through the Internet (replacing the need for 30 paper copies of each proposal). Over 2,900 electronic proposals were received! Peer reviewers were then offered the option of receiving their proposals in electronic format, thereby facilitating the proposal review process.

Information Management – Paving the Information Super Highway

In FY02, the CDMRP launched the CDMRP Enterprise Data System, a relational database system that is currently used internally to centralize relevant archived and current data on all research programs managed by the CDMRP. System features include:

- a. Real-time access to current and past program funding data
- b. Direct connectivity to other relevant database systems within the USAMRMC

- c. Web-based user interfaces for better local and remote access
- d. Automated e-mail notification to users

CDMRP AWARD OPPORTUNITIES – THINKING OUTSIDE THE BOX

Equally important to advancing management execution strategies is ensuring that the focus and structure of research categories and award mechanisms offered by the CDMRP

match the unique opportunities for research breakthroughs. In this area, the CDMRP has created novel approaches that are being adopted by other government and private research funding organizations. The CDMRP offers different award mechanisms that fill unique niches and complement funding opportunities offered elsewhere. Highlighted below are some of the research opportunities that have been used as vehicles to support innovative, high-risk research; develop necessary infrastructure for scientific advancements and collaborative projects that

Electronic Innovations – We’ve Come a Long Way

The CDMRP has been a leader in advancing electronic technology to improve and facilitate program management. While electronic innovations can be exciting and novel, their true utility is measured by the time and money saved and the efficiency garnered. The following highlights some of the electronic innovations used by the CDMRP since 1995.

1995

A scannable proposal cover booklet form – a form that collects investigator and proposal demographics – was introduced, replacing a paper one. This scannable booklet has resulted in significant program management cost and time savings.

1997

A programmatic review database was first developed and used to facilitate the second tier of review by providing instantaneous information relevant to portfolio balance, improving data entry efficiency, and enabling real-time tracking of funding decisions.

1998

The CDMRP web site was launched, serving as a primary means to disseminate information about the CDMRP. Today, over 85,000 hits to the site are recorded annually.

1999

Paperless contracting was enhanced through the introduction of an electronic document to initiate funding and negotiations of individual awards – a savings of more than one-half of a man-year of labor associated with the processing and tracking of CDMRP’s research awards.

2000

The first electronic submission was offered by the CDMRP for a single award mechanism within a program. Concept proposals were submitted via electronic application forms through the CDMRP web site and via e-mail.

A scientific peer review electronic-scoring system was used for the first time to facilitate the first tier of review, replacing paper score sheets. This electronic innovation has dramatically streamlined the peer review process by increasing the efficiency of the scoring procedure and eliminating the costs of printing, sorting, distributing, and correcting paper score sheets.

2001

Electronic submissions were offered for the first time for all award mechanisms within a program. A total of 48 proposals were received electronically.

2002

Electronic submissions were offered for all award mechanisms for almost all of the programs managed by the CDMRP. Over 2,900 proposals were received electronically.

support a portfolio of interrelated multidisciplinary research; and train new investigators.

Innovative Research Awards

In 1993, a recommendation was made to the USAMRMC by the Institute of Medicine (IOM) to “create an environment in which creative ideas and first-rate research can flourish and in which investigators are not afraid to gamble on risky but alluring ideas.” Many of the award mechanisms offered by the CDMRP emphasize support for research on creative and novel ideas to stimulate new directions in research. While each mechanism has different award requirements, all share a common goal of fostering innovative ideas and technology.

The CDMRP has funded 2,168 awards through four mechanisms that specifically encourage innovative scientific ideas and approaches to disease eradication. These awards have made significant contributions to our understanding of disease processes, the development of therapeutics, and the improvement of quality of life. Table II-1 summarizes the number of awards made and the dollars invested from

Table II-1. Summary of Awards from FY93–01 Appropriations That Foster Novel Ideas

Award Mechanism	Program (Fiscal Year)	Number of Awards	Dollars Invested
Concept	BCRP (FY99–00) ¹	301	\$22.9M
Idea/Idea Development	BCRP (FY93–01)	1,255	415.1M
	PCRP (FY97–01)	339	166.4M
	NFRP (FY99–01)	20	6.9M
	OCRP (FY99)	12	5.8M
Innovator	BCRP (FY01)	5	13.8M
New Investigator	PCRP (FY97–01)	203	63.3M
	NFRP (FY99–01)	17	7.0M
	OCRP (FY99–00)	16	6.9M
Total		2,168	\$708.1M

¹ Concept Awards were offered by the FY99 BCRP. Awards were supported by both FY99 and FY00 appropriations.

FY93–01 appropriations for support of novel ideas.

Expanding upon the success of these award mechanisms, in FY02 the BCRP designed the Exploration Award to enable investigators to explore an untested, innovative concept in breast cancer research. A goal of the Exploration Awards is to promote creative thinking that will yield imaginative concepts, ideas, and approaches at the dynamic interfaces of different areas of science, including those not traditionally or extensively involved in cancer research.

Building Infrastructure

In the 1993 IOM report, it was noted that “research in breast cancer is impeded by the inadequate access to resources that are appropriate for sharing—including tumor samples, cell lines, animal models, DNA probes, follow-up data on women diagnosed with breast cancer, information about ongoing clinical trials,

and economic data to evaluate the cost of care.”¹ Based on this clear need in 1993, and the need for similar support identified by Integration Panels (IPs) in subsequent years, the CDMRP has funded infrastructure awards across most of its programs. These awards are designed to provide researchers with support to (1) create or obtain materials and data from multiple sources that would otherwise be difficult to acquire, or (2) establish and support centers or consortia that can provide a foundation for future research. Award mechanisms developed by CDMRP IPs to enhance infrastructure are listed in Table II-2. The following examples highlight some of the most recent infrastructure awards offered by the CDMRP.

- In FY01 and FY02, the BCRP offered Breast Cancer Center of Excellence Awards to support the establishment of multidisciplinary, multi-institutional collaborations in



¹ Institute of Medicine, *Strategies for Managing the Breast Cancer Research Program: A Report to the U.S. Army Medical Research and Development Command, 1993.*

a Center of Excellence environment, to unite the most highly qualified investigators to focus on an important question relevant to breast cancer.

- ▶ In FY02, the BCRP offered Biotechnology Clinical Partnership Awards to form partnerships between biotechnology companies and academic institutions or health care organizations to advance clinical trials in breast cancer therapeutics or chemoprevention.
- ▶ The Ovarian Cancer Research Program (OCRP) has emphasized the need for multiple disciplines and institutions to work together on related ovarian cancer issues. Over the past 6 years, the OCRP supported 16 Program Project Awards to establish regional centers for the study and treatment of ovarian cancer.
- ▶ The FY01 Prostate Cancer Research Program (PCRP) offered support for Prostate Cancer Consortium Development Awards. The 5 recipients of these awards competed for Prostate Cancer Consortium Awards in FY02. Consortium Awards will bring together the nation’s leading prostate cancer researchers, through multidisciplinary/multi-institutional collaborations, to focus on critical areas of prostate cancer research.

Support for Training and Recruitment

In the 1993 IOM report, it was stated that the “best investment the program can make is to stimulate talented new investigators...” The CDMRP’s

Table II-2. Number of CDMRP Infrastructure Awards from FY92–01

Infrastructure Award Mechanism	Program (Fiscal Year)	Number of Awards	Dollars Invested
Behavioral Center of Excellence	BCRP (FY00)	4	\$23.2M
Breast Cancer Centers of Excellence	BCRP (FY01)	5	\$32.3M
Cancer Center Initiation/ Program Projects	BCRP (FY93–95)	4	\$17.8M
	PCRP (FY99)	4	\$8.5M
	OCRP (FY97, 98, 00–01)	16	\$30.2M
Collaborative-Clinical Translational Research	BCRP (FY99–00)	3	\$5.5M
Prostate Cancer Consortium Development	PCRP (FY01)	5	\$.7M
Infrastructure Enhancement for Research Support	BCRP (FY93/94)	28	\$23.4M
Mammography/Breast Imaging Equipment	BCRP (FY92)	2	\$4.1M
Natural History Studies	NFRP (FY97)	2	\$5.7M
Special Mammography Demonstration Projects	BCRP (FY95)	8	\$11.4M
Total		81	\$162.8M

commitment to training and recruitment is demonstrated by its portfolio of funded projects, nearly one-third of which focus on training and recruitment.

The CDMRP’s flexibility is evident when one reviews the spectrum of awards to stimulate talented new investigators, as illustrated in Table II-3. The CDMRP has created mechanisms to support both new researchers in the field and established scientists interested in extending their expertise to the study of other diseases. Through FY01 the CDMRP has offered Training and Recruitment Awards in the form of Career Development Awards, Health Disparity Training, HBCU/MI Training Awards, Health Disparity Training, Institutional Training Programs (pre-doctoral and postdoctoral trainees), Minority Population Focused Training

Awards, Predoctoral Traineeships, Postdoctoral Traineeships, Sabbaticals, and Undergraduate Summer Training Programs. The CDMRP has also been able to focus some training awards toward areas of particular need. For example, in FY02 the BCRP recognized a need for additional clinical research physicians. Therefore, they offered support

“Serving as Grants Manager for the DOD Neurofibromatosis and Ovarian Cancer Research Programs has been a rewarding experience. Being able to monitor research funded by our programs enables me to see the fruits of all the hard work that researchers are putting forth in their attempt to treat and eradicate these diseases.”

—Naba Bora, Ph.D., Grants Manager, CDMRP

Table II-3. Number of CDMRP Training and Recruitment Awards from FY92–01

Training/Recruitment Award Mechanism	Program (Fiscal Year)	Number of Awards	Dollars Invested
Career Development	BCRP (FY93–01)	175	\$38.9M
HBCU/MI¹ Training	BCRP (FY99–00)	7	\$3.6M
Health Disparity Training-Prostate Scholar	PCRP (FY01)	2	\$.5M
Institutional Training	BCRP (FY93/94, 98–99)	34	\$19.9M
Minority Population Focused Training	PCRP (FY98–00)	24	\$1.3M
Predoctoral	BCRP (FY93–01)	501	\$31.1M
Postdoctoral	BCRP (FY93–01)	418	\$54.1M
	PCRP (FY99–01)	64	\$5.7M
	NFRP (FY98–00)	26	N/A ²
Sabbaticals	BCRP (FY93–94, 96–97)	8	\$.8M
Undergraduate Summer Training Program	BCRP (FY00–01)	9	\$1.2M
Total		1,268	\$157.1M

¹ Historically Black Colleges and Universities/Minority Institutions

² The NFRP offered support for postdoctoral trainees as nested traineeships within Investigator-Initiated Research Awards; dollars invested for the 26 postdoctoral traineeships are not available.

for these researchers through the Physician-Scientist Training Award.

The ultimate goal of building a foundation for future research is being met. Preliminary indications are that these training and recruitment award mechanisms are successful in encouraging productive new investigators to enter targeted fields of research.

OUTREACH AND COMMUNICATION

The CDMRP recognizes the importance of reaching out to all communities who are affected by disease. The CDMRP has supported several efforts to foster program awareness

and partner with other agencies in an effort to lead our nation against the war on cancer and disease.

Working with Special Populations

The Special Populations Program (SPP) was established in 1998 to enhance the ability of the CDMRP to address the significant disparities that exist in the incidence, morbidity, and mortality among different ethnic groups² in many of the diseases for which the CDMRP provides support. The foundation for the CDMRP's SPP was the Minority Health Initiative.³ This initiative was launched in 1997 to address CDMRP long-range goals in the area of minority health issues.

The purpose of the SPP is to address disparities in underserved, understudied, and underrepresented communities. Its mission is to enhance the CDMRP's efforts in this area by creating new award mechanisms, reaching out to communities through improved communication, and by partnering with other agencies.

The BCRP and PCRP have used the recommendations from the Minority Health Initiative to guide their efforts in designing mechanisms that will (1) address the disparities in the incidence, prevalence, morbidity, and mortality rates among different ethnic groups, (2) attract proposals from investigators at HBCU/MI, and (3) increase research on minority populations. Since FY99, the BCRP has offered awards targeted at the individual and institutional level to encourage research at HBCU/MI. The PCRP supported Minority Population Focused Collaborative Training Awards in FY98–00 to enable investigators to form collaborations and develop a prostate cancer research concept that focuses on the disparity in prostate cancer incidence and mortality among different ethnic groups. In FY01, the PCRP designed three new award mechanisms to address health disparity issues, two of which were offered again in FY02, Health Disparity Training and Health Disparity Research Prostate Scholar Awards.

Additionally, the CDMRP has ensured the participation of minority scientists and consumers in its review panels.

² American Cancer Society - Cancer Facts and Figures 2002.

³ Details on the Minority Health Initiative can be found in the DOD CDMRP Annual Reports of September 1999 and September 2000. A copy of the Executive Summary from the Minority Initiative Committee is available on the CDMRP web site (<http://cdmrp.army.mil>).

"The CDMRP is committed to supporting research aimed at finding treatments and cures for all populations. Therefore, a critical role of the Special Populations Program is soliciting population specific research with attention to disease disparity for those CDMRP programs with differences in areas such as incidence, morbidity, and mortality."

*—Barbara Terry-Koroma, Ph.D.
Special Populations Program
Manager*

Relationships with minority scientists and consumers have been fostered by attendance at conferences sponsored by such groups as the Intercultural Cancer Council; Society for the Advancement of Chicanos and Native Americans; Asian-American and Pacific Islander Health Forum; and Minority Health Professions Foundation. The CDMRP has also formed affiliations with organizations such as the Hispanic Association of Colleges and Universities and the National Association of Native American Physicians.



Communication among Funding Agencies through a Common Scientific Outline

To effectively work with other funding agencies and assimilate the vast amount of data being generated, it is critical to develop a method to share knowledge. The CDMRP has partnered with the National Cancer Institute (NCI) in an ongoing collaborative effort to develop a common system to classify funded research projects. The Common Scientific Outline (CSO) was initiated by the NCI to categorize its funded research projects in a scientific and disease-related manner. The CSO is divided into the following broad scientific areas: (1) Biology; (2) Etiology; (3) Prevention; (4) Early Detection, Diagnosis, and Prognosis; (5) Treatment; (6) Cancer Control, Survivorship, and Outcomes Research; and (7) Scientific Model Systems. These categories were chosen to reflect areas of science and scientific disciplines that many expert panels have identified as key to understanding the current state of the field.

The CDMRP was invited to participate in this effort in 1997 and has continued to work with the NCI to develop a

working model of the CSO. In 2000, eight additional cancer-funding organizations were asked to join the efforts of the NCI and the CDMRP in evaluating the utility of the CSO as a tool to facilitate description of their respective portfolios and communication among funders. The participating organizations are the American Cancer Society, the California Breast Cancer Research Program, the California Cancer Research Program, the National Cancer Research Institute of the United Kingdom, CaP CURE, the Medical Research Council of the United Kingdom, the Oncology Nursing Society, and the Susan G. Komen Breast Cancer Foundation.

The CSO may be used in several ways to share knowledge and information among different funding agencies, including:

- identifying areas of research that have been funded,
- planning for the future by identifying research opportunities and gaps,
- helping to prevent funding of unnecessary duplicative research,
- identifying underrepresented areas of research, and



Responding to inquiries from Congress, consumer advocates, and others regarding the type of research being supported.

All 10 participating funding organizations, known collectively as the CSO Partnership, have publicly agreed that they will exchange information after they have completed classifying their funded portfolios. A common web site for CSO partners that will allow participating organizations to view each other's research portfolios is currently under implementation.

SCIENTIFIC ACHIEVEMENTS

The CDMRP has funded approximately \$1.6 billion (B) in biomedical research from FY92–01. This has resulted in 4,180 research grants, contracts, and cooperative agreements (Table II-4). Scientific advances arising from these awards are expected to have an impact on the targeted diseases managed by the CDMRP.

The CDMRP is committed to funding a diversified portfolio of research efforts. These awards cover over a dozen major scientific areas encompassing basic, clinical, and population-based research. The cumulative accomplishments of all 18 programs within the CDMRP are noteworthy and can be measured by the number of resultant publications, abstracts, presentations, and patents/licensures reported by awardees. This information is summarized in Table II-5.

In an effort to efficiently disseminate information about research accomplishments, the CDMRP now lists publications, self-reported by awardees, with the corresponding proposal abstract on the web site <http://cdmrp.army.mil>. Each program's achievements are discussed in more detail in the corresponding



program sections (Sections III–XI) of this report.

The CDMRP believes that by working together we will be able to shape the future of health care. The future is now, as evidenced by the research accomplishments that are described throughout this annual report.

Table II-4. FY92–01 Awards Managed by the CDMRP

Program (Fiscal Years)	Grants Managed	Funds Awarded
BCRP (FY92–01)	3,217	\$1,043.3M
PCRP (FY97–01)	651	\$263.0M
NFRP (FY96–01)	85	\$58.7M
OCRP (FY97–01)	45	\$43.4M
PRMRP (FY99–01)	67	\$70.7M
DOD/VA (FY99/00)	9	\$6.0M
DWHRP (FY95)	69	\$32.8M
ORP (FY95)	5	\$3.7M
Institutionally Based Research Programs (FY95–01)	32	\$76.1M
Total	4,180	\$1,597.7M

Table II-5. Outcomes Reported by CDMRP–Funded Investigators

Publications	>5,560
Abstracts/Presentations at Professional Meetings	>3,200
Patents/Licensures (including applications)	>160