Introduction to CDMRP Grants

Blake Plowman
Research Partnerships Leader (USA)

International Grants Team
Research Grant and Contract Services
Research Innovation and Commercialisation
To begin with, I’d like to acknowledge that I am on the lands of the Wurundjeri people (with others joining us from other lands) who have been custodians of this land for thousands of years, and acknowledge and pay my respects to their Elders past and present.
About the CDMRP

CDMRP: Congressionally Directed Medical Research Programs

Transforming Healthcare through Innovative and Impactful Research
About the CDMRP

CDMRP: Congressionally Directed Medical Research Programs

BRAIN INJURY AND DISEASE PREVENTION RESEARCH

The Committee is supportive of ongoing research and development efforts focused on the increased risk of certain conditions after a servicemember experiences traumatic brain injury. The Committee is aware of research into the relationship between traumatic brain injury and neurodegenerative diseases, such as chronic traumatic encephalopathy and Parkinson’s disease. The Committee recommendation includes $60,000,000 aimed at halting the neurodegenerative processes that follow traumatic brain injury.
Hierarchy

- Department of Defense
- Department of the Army
- Army Futures Command
- U.S. Army Medical Research and Development Command (USAMRDC)
- CDMRP
Why is the CDMRP of interest?

- Funding available
- Broad range of areas
- Coverage across project lifecycles
- Clear guidelines
- Eligibility
Success Rates

University of Melbourne success rate in the last 5 years: 15%

CDMRP overall success rate: 14%.

Note that Programs provide information on their success rates, and these do vary (ranging from 5% to 50%)
Some Potential Barriers?

- Will I need a US partner to apply?
- Do I need to build up a profile with the CDMRP to be successful?
- Is it too early in my research career to apply?

Vision: Transform healthcare for Service members and the American public through innovative and impactful research

Mission: Responsibly manage collaborative research that discovers, develops, and delivers healthcare solutions for Service members, Veterans, and the American public
A Quick Overview of Terminology

**Program**
- The broad health areas of interest (lung cancer, spinal cord injury)

**Topic**
- Larger Programs call out their specific areas of interest

**Awards**
- These are the different funding levels that can be applied to under the Programs (various funding levels that can be targeted)
Congressionally Directed Medical Research Programs

Programs with a cancer focus:

- Breast Cancer
- Kidney Cancer
- Lung Cancer
- Melanoma
- Ovarian Cancer
- Pancreatic Cancer
- Prostate Cancer
- Rare Cancers
- *Peer Reviewed Cancer*...
Peer Reviewed Cancer Research Program

- Bladder cancer
- Blood cancers
- Brain cancer
- Colorectal cancer
- Endometrial cancer
- Esophageal cancer
- Germ cell cancers
- Head and neck cancer
- Liver cancer
- Lymphoma
- Mesothelioma
- Metastatic cancer
- Myeloma
- Neuroblastoma
- Pediatric, adolescent, and young adult cancers
- Pediatric brain tumors
- Sarcoma
- Stomach cancer
- Thyroid cancer
- Von Hippel-Lindau syndrome malignancies (excluding cancers of the kidney and pancreas)
Programs without a cancer focus:

- Alcohol and Substance Abuse Disorders
- Amyotrophic Lateral Sclerosis
- Autism
- Bone Marrow Failure Disease
- Chronic Pain Management
- Combat Readiness Medical
- Duchenne Muscular Dystrophy
- Epilepsy
- Hearing Restoration
- Joint Warfighter Medical
- Lupus
- Military Burn
- Multiple Sclerosis
- Neurofibromatosis
- Orthotics and Prosthetics Outcomes

- Parkinson’s
- Peer Reviewed Alzheimer's
- Peer Reviewed Orthopaedic
- Reconstrcutive Transplant
- Spinal Cord Injury
- Tick-Borne Disease
- Toxic Exposures
- Traumatic Brain Injury and Psychological Health
- Tuberous Sclerosis Complex
- Vision
- Peer Reviewed Medical...
### Peer Reviewed Medical Research Programs

<table>
<thead>
<tr>
<th>Cardiovascular Health</th>
<th>Hemorrhage Control and Blood Products</th>
<th>Respiratory Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Cardiomyopathy</td>
<td>- Hemorrhage Control</td>
<td>- Pulmonary Fibrosis</td>
</tr>
<tr>
<td>- Congenital Heart Disease</td>
<td>- Pathogen-Inactivated Blood Products</td>
<td>- Respiratory Health</td>
</tr>
<tr>
<td>- Familial Hypercholesterolemia</td>
<td>- Platelet-Like Cell Production</td>
<td>- Sustained Release</td>
</tr>
<tr>
<td>- Hypercholesterolemia</td>
<td>- Sustained Release Drug Delivery</td>
<td>- Drug Delivery</td>
</tr>
<tr>
<td>- Hypertension</td>
<td>- Trauma</td>
<td>- Trauma</td>
</tr>
<tr>
<td>- Vascular Malformations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Women’s Heart Disease</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Sustained Release Drug Delivery</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Peer Reviewed Medical Research Programs (Continued)

Infectious Diseases
- Hepatitis B
- Malaria
- Sustained Release Drug Delivery
- Viral Diseases
- Plant-Based Vaccines

Autoimmune Disorders and Immunology
- Food Allergies
- Guillain-Barré Syndrome
- Inflammatory Bowel Disease
- Rheumatoid Arthritis
- Sustained Release Drug Delivery

Nutrition and Metabolism
- Diabetes
- Mitochondrial Disease
- Nutrition Optimization
- Sustained Release Drug Delivery
Peer Reviewed Medical Research Programs (Continued)

Neuroscience
- Dystonia
- Eating Disorders
- Fragile X
- Friedreich’s Ataxia
- Frontotemporal Degeneration
- Hydrocephalus
- Myalgic Encephalomyelitis/Chronic Fatigue Syndrome
- Myotonic Dystrophy
- Non-Opioid Therapy for Pain Management
- Peripheral Neuropathy
- Rett Syndrome
- Sleep Disorders and Restriction
- Suicide Prevention
- Sustained Release Drug Delivery
- Trauma

Internal Medicine
- Ehlers-Danlos Syndrome
- Endometriosis
- Epidermolysis Bullosa
- Focal Segmental Glomerulosclerosis
- Interstitial Cystitis
- Nephrotic Syndrome
- Pancreatitis
- Polycystic Kidney Disease
- Pressure Ulcers
- Sustained Release Drug Delivery

Orthopaedic Medicine
- Arthritis
- Fibrous Dysplasia
- Musculoskeletal Disorders (related to acute and chronic bone conditions and injuries)
- Sustained Release Drug Delivery
# Example of Available Awards

**CDMRP**
Transforming Healthcare through Innovative and Impactful Research

**Program Funding Opportunities**

**FY22 Peer Reviewed Medical Research Program (PRMRP)**

<table>
<thead>
<tr>
<th>Mechanism</th>
<th>Release Date</th>
<th>Program Announcement/Instructions</th>
<th>Submission Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Trial Award (CTA)</td>
<td>March 16, 2022</td>
<td>Program Announcement <a href="#">Application Instructions</a></td>
<td>Pre-Application (Preproposal): May 6, 2022 5:00 p.m. Eastern Time, Submit Pre-Application</td>
</tr>
<tr>
<td>Discovery Award (DA)</td>
<td>March 16, 2022</td>
<td>Program Announcement <a href="#">Application Instructions</a></td>
<td>Pre-Application (Letter of Intent): April 22, 2022 5:00 p.m. Eastern Time, Submit Pre-Application</td>
</tr>
</tbody>
</table>

[Synopsis of FY22 PRMRP Award Mechanisms](#) - (Adobe PDF) - provides a brief description and key elements of the award mechanism.
### Example of Available Awards

#### FY19-FY20 PRMRP Award Mechanisms

<table>
<thead>
<tr>
<th>Award</th>
<th>Value (USD)</th>
<th>Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discovery Award</td>
<td>$200,000</td>
<td>2 years</td>
</tr>
<tr>
<td>Focused Program Award</td>
<td>$7.2m</td>
<td>4 years</td>
</tr>
<tr>
<td>Investigator-Initiated Research Award</td>
<td>$1.6m or $2m</td>
<td>4 years</td>
</tr>
<tr>
<td>Technology/Therapeutic Development Award</td>
<td>$2m or $4m</td>
<td>4 years</td>
</tr>
<tr>
<td>Clinical Trial Award</td>
<td>Not limited</td>
<td>4 years</td>
</tr>
</tbody>
</table>
When can I apply?
Early Stages of the Application Process

1. Letter of Intent
2. Pre-application
3. Review
4. Invitation to submit
5. Full Application
When can I apply?

Pre-announcements

Full announcements

Brief details on the awards offered are available now

Full details on the awards offered and guidelines on how to apply are available now
Key Resources

Program announcement/pre-announcements

I. OVERVIEW OF THE FUNDING OPPORTUNITY
Program Announcement for the Department of Defense
Defence Health Program
Congressionally Directed Medical Research Programs
Autism Research Program
Clinical Trial Award
Announcement Type: Initial
Funding Opportunity Number: W81XWH-21-1-ARP-CTA
Catalog of Federal Domestic Assistance Number: 12.420 Military Medical Research and Development

SUBMISSION AND REVIEW DATES AND TIMES
- Pre-Application Submission Deadline: 5:00 p.m. Eastern time (ET), May 3, 2021
- Invitation to Submit an Application: June 2021
- Application Submission Deadline: 11:59 p.m. ET, August 5, 2021
- End of Application Verification Period: 5:00 p.m. ET, August 10, 2021
- Peer Review: September 2021
- Programmatic Review: November/December 2021

This program announcement must be used in conjunction with the General Application Instructions, version 4.0. The General Application Instructions document is available for downloading from the Grants.gov funding opportunity announcement by selecting the “Package” tab, clicking “Preview,” and then selecting “Download Instructions.”

DOD FY21 Autism Clinical Trial Award
Key Resources

CDMRP Website
Annual Report

**AUTISM RESEARCH PROGRAM**

Program Milestones

- 2018: Launched the Autism Research Program (ARP) at The University of Melbourne, focusing on innovative research approaches to understand the mechanisms underlying autism.
- 2019: Initiated partnerships with leading research institutions worldwide, including Harvard University and Stanford University, to advance our understanding of autism.
- 2020: Successfully funded multiple research projects through a competitive grants program, recruiting top talent from around the globe.
- 2021: Recorded over 50 publications in leading scientific journals, cementing the ARP’s reputation as a leader in autism research.
- 2022: Expanded our outreach to include community engagement and public education initiatives.

**Focus Area**

- Understanding mechanisms of, and developing methods to detect, the transition from acute to chronic pain following trauma, either physical or psychological.
- Development of novel non-opioid receptor-targeted therapies for the treatment of chronic pain.
- Implementation science (for evidence-based, efficacious interventions to manage chronic pain).
- Chronic pain (i.e., the transition of acute pain to chronic pain) and specific knowledge gap.
- Novel non-opioid pharmacological solutions.
- Devices that treat chronic pain directly or those that improve the administration of non-opioid analgesics.
- Complementary and integrative health non-pharmacological interventions.
- Unique barriers for delivery of complementary and integrative health therapies and models of care in military populations and environments, including at-risk sub-populations.
- Self-management and service-of-care models.
- Multimodal and combination therapies.
- Pain and its bi-directional interactions with co-morbidities (e.g., polytrauma head, suicidal thoughts and behaviors, substance abuse, etc.).

**Left: Chronic Pain Research Program**

**Above: Autism Research Program**
THE BREAST CANCER LANDSCAPE

The BCRP has prepared an overview of the Breast Cancer Landscape, covering topics most pertinent to the program’s mission of ending breast cancer. Some key points from the Breast Cancer Landscape:

**INCIDENCE & MORTALITY**
- Worldwide, breast cancer accounts for nearly a quarter of all cancers in women.
- In 2020, there were 684,990 breast cancer deaths globally.

**RISK FACTORS**
- Evidence attributes the majority of breast cancers to one factor but various physical, environmental, and genetic factors.
- Most risk factors are not modifiable, including age, family history, reproductive history, age at menarche/ menoopause, BRCA status, and breast density.

**RECURRENCE & METASTASIS**
- An estimated 20%-30% of women diagnosed with invasive breast cancer will have a recurrence.
- Treatments to permanently eradicate metastasis do not exist. There is no cure once metastatic disease has occurred.

**TREATMENTS**
- Although breast cancers are highly heterogeneous, the majority of women with breast cancer still receive the same treatment, as though all breast cancers were the same within that subtype.
- Standard adjuvant therapies have only a small (0% to 10%) impact on disease-specific survival.
- The cost of treating breast cancer continues to rise. The total national costs for medical services and oral/prescription drug costs for 2015 were highest for female breast cancer ($21.7 billion).

BCRP OVERARCHING CHALLENGES

Considering the current Breast Cancer Landscape and the BCRP’s vision to end breast cancer, each application must address at least one overarching challenge. The pie chart below illustrates the program’s investments in each of the following BCRP overarching challenges:

- Prevent breast cancer (primary prevention)
- Identify determinants of breast cancer initiation, risk, or susceptibility
- Distinguish deadly from non-deadly breast cancer
- Conquer the problems of overdiagnosis and overtreatment
- Identify what drives breast cancer growth; determine how to stop it
- Identify why some breast cancers become metastatic
- Determine why breast cancer cells are dormant for years and then re-emerge; determine how to prevent lethal recurrence
- Revolutionize treatment regimens by replacing them with ones that are more effective, less toxic, and impact survival
- Eliminate the mortality associated with metastatic breast cancer

FY13–FY17 BCRP Funding Invested by Overarching Challenge

- Identify what drives breast cancer growth $108,802,719
- Determine how to prevent lethal recurrence $15,024,789
- Revolutionize treatment regimens $413,832,475
- Eliminate metastatic mortality $232,014,289
# Webinars

<table>
<thead>
<tr>
<th>Webinar Title</th>
<th>Summary*</th>
<th>Posting Date**</th>
<th>Video Archived</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funding Opportunities and Strategies for Success</td>
<td>In this first of the CDMRP Funding Opportunities webinar series, viewers will learn how to find CDMRP funding opportunities, understand the process for applying, and identify tips for success as well as pitfalls in grant application design.</td>
<td>11-Feb 2019</td>
<td>View</td>
</tr>
<tr>
<td>High Risk/High Gain Funding Opportunities</td>
<td>This webinar will walk through three categories of hypothesis-driven, high risk/high gain funding opportunities - Initial Concept Awards, Early Idea Awards, and Established Idea Awards. The key features associated with these categories, include innovation, impact, and research strategy and feasibility. In addition, the relevant peer and programmatic review criteria will be reviewed.</td>
<td>28-Feb 2019</td>
<td>View</td>
</tr>
<tr>
<td>Team Science Funding Opportunities</td>
<td>The CDMRP funding opportunities that have a team science component are the focus of this webinar. The webinar will provide an overview of types of award mechanisms that encourage multiple investigators, key elements of team science program announcements, required application documents, and general guidance for applicants.</td>
<td>11-Mar 2019</td>
<td>View</td>
</tr>
</tbody>
</table>
RESEARCH AND FUNDING ENVIRONMENT

STATE OF THE SCIENCE
The funding landscape for epilepsy research is complex. A 2012 report cited multiple cross-cutting themes in epilepsy. These include disease complexity, quality of life for those living with epilepsy and their caregivers, the need to consider the "whole patient," timely access to medications, better population-based data, improved information for healthcare professionals, better education for caregivers and those living with epilepsy, and removing the stigma of the disease.

Great strides have been made in the development of pharmacological interventions for epilepsy; however, the bulk of current research funding remains focused on basic research. Currently available medications require trial and error because they do not work for all individuals, and their side effects can vary greatly. A better understanding of post-traumatic epileptogenesis is needed. This will require advanced tools in genetics, animal models, and connectomics in order to develop better clinical endpoints to drive the drug discovery pipeline.

While research into PTE dates back as far as World War II, little is actually known about the magnitude of PTE in individuals who have sustained closed-head injuries in the current conflicts. There are also confounders such as psychogenic seizures that need research in order to better understand PTE. Care for individuals who have suffered PTE subsequent to TBI in the current conflicts has benefited from pharmacological interventions; however, the side effects of such medications are problematic.

RESEARCH FUNDING LANDSCAPE
Given the number of neurological disorders associated with epilepsy and the breadth of what is needed to improve care, multiple partners are involved in funding epilepsy research. These include federal partners (e.g., the NIH, VA, Centers for Disease Control and Prevention, and CDMRP), as well as non-federal entities (e.g., Citizens United for Research in Epilepsy, the Epilepsy Foundation, the American Epilepsy Society, and the Patient Centered Outcomes Research Institute).

Epilepsy research activities are nationally coordinated by the NIH through the Interagency Collaborative to Advance Research in Epilepsy (ICARE) (http://icare.nih.gov). ICARE meetings are used as a forum for sharing information about epilepsy research activities, advances, and collaboration. The ERP also partners with the NIH by centralizing relevant data from human prospective studies into the Federal Interagency Traumatic Brain Injury Registry (FITBIR). The FITBIR is a central repository for phenotypic, genomic, and imaging data from TBI studies that is accessible as a web-based application to securely contribute and access data.

The ERP also coordinates its activities with the international epilepsy research community. The International League Against Epilepsy has recently formed the Anti-epileptogenesis following TBI Task Force, with the goal of moving this topic forward from an international perspective. The task force will identify clear goals and steps that can be used to advance PTE science.

Representatives from federal and non-federal funding entities also serve as members on the ERP's Programmatic Panel. As part of ERP Programmatic Panel membership, they provide individual recommendations regarding funding, portfolio balance, scientific direction, and coordination activities that are relevant to the ERP's vision and mission.
Current/Previously Funded Projects

Identifying Genetic, Transcriptional, and Microenvironment Drivers of Lethal Prostate Cancer for Patient Stratification, Disease Tracking, and Drug Target Discovery

Principal Investigator: SANDHU, SHAHNEEN
Institution Receiving Award: MELBOURNE, UNIVERSITY OF
Program: PCRP
Proposal Number: PC200719
Award Number: 2012XWH-21-1-053
Funding Mechanism: Idea Development Award - Established Investigator
Partnering Awards:
Award Amount: $824,895.00

View Technical Abstract

PUBLIC ABSTRACT

One in seven men will be diagnosed with prostate cancer in their lifetime, and approximately 40% will develop metastasis. Although most will initially respond to androgen deprivation therapy, patients inevitably develop resistance, resulting in continued tumor growth. This condition is known as metastatic castration-resistant prostate cancer (mCRPC). mCRPC often displays high levels of androgen receptor (AR), and drugs that block AR activity, such as abiraterone and enzalutamide, initially halt tumor growth but ultimately fail to control the disease. Unfortunately, many patients with mCRPC develop treatment resistance and succumb within 7 to 24 months. There is an urgent need for long-lasting therapies for these patients.

While we have an understanding of genetic mechanisms of resistance, these do not fully explain why patients stop responding to treatment. Clues are found in a rare subtype of mCRPC, neuroendocrine (NE) prostate cancer. Here, rather than acquiring mutations, cells go through major gene expression (transcriptional) changes that make them resistant. Since these transcriptional changes occur in all or most NE tumor cells, they can be easily identified with current technologies that measure the average gene expression across millions of cells. However, they are impossible to detect if they only occur in a subset of cells, potentially explaining why we have been unable to detect transcriptional resistance in other subtypes. With state-of-the-art single-cell technology, we can investigate thousands of cells individually and identify cells with distinct transcriptional profiles. Using this exciting new technology, we recently identified multiple distinct types of transcriptional resistance in another form of mCRPC, suggesting that transcriptional resistance is not limited to NE tumors. This led us to hypothesize that transcriptional resistance is widespread across mCRPC. To test this hypothesis, we will:

- Aim 1. Identify transcriptional resistant tumor cells in mCRPC metastatic samples. We will perform single-nucleus transcriptional analyses of metastatic specimens. The tumors of these patients had developed resistance to all drugs used in the clinic, and therefore all tumor cells in the specimens are resistant to treatment. We will analyze ~6,000 cells per specimen and use bioinformatics (computational tools) to identify populations of tumor cells with distinct transcriptional profiles. These will allow us to narrow down cell populations with transcriptional resistance and identify gene markers that can be used to identify cells with transcriptional resistance.
List of Helpful Resources

How to find opportunities:
• Grants.gov
• https://cdmrp.army.mil

Which projects have the CDMRP funded?
• https://cdmrp.army.mil/search.aspx

Help for applications:
• International Grants DoD scheme page
• Successful applications from the University are available on the Grants Library
International Grants Accelerator Program

In 2022 the accelerator program will assist in navigating the international grants space through:

• Finding Funding

• ECR Support – Pitch Your Project

• Travel Funding

• Upcoming Information Sessions:
  - How to Complete a CDMRP Application (April 29)
  - Funding opportunities from the United Kingdom, France and Germany (15 June)
  - US National Institutes of Health (15 July)
  - How to manage US projects at the post-award stage (17 August)

https://sites.research.unimelb.edu.au/research-funding/researcher-development-schemes/IGAP-funding
Questions?

Blake Plowman
Research Partnerships Leader (USA)
International Grants Team
Research Grants and Contracts Services
Research, Innovation and Commercialisation

Email: blake.plowman@unimelb.edu.au or ric-international@unimelb.edu.au
Phone: 9035 8317
COMMONWEALTH OF AUSTRALIA

Copyright Regulations 1969

Warning

This material has been reproduced and communicated to you by or on behalf of the University of Melbourne pursuant to Part VB of the Copyright Act 1968 (the Act).

The material in this communication may be subject to copyright under the Act. Any further copying or communication of this material by you may be the subject of copyright protection under the Act.

Do not remove this notice