

**Wayne State Warriors Marijuana Clinical Research Program: Investigating the Impact of Cannabinoids on Veterans' Behavioral Health**

Leslie H. Lundahl, PhD, Lead Principal Investigator  
David Ledgerwood, PhD, Co-Principal Investigator

**Project Aims:**

In this randomized, controlled clinical trial we are recruiting veterans with PTSD who report using cannabis. **We are conducting two studies that are complementary and linked via their aims and methodology.** In **Study 1**, a minimum of 200 veterans will be randomized into one of four different THC:CBD dose conditions (THC; CBD; THC+CBD, and placebo) for a 12-week treatment phase. In **Study 2**, 150 veterans will be randomized into *one of two groups*: a THC reduction group (n=75), tailored across THC products that are approximately 50% lower in THC than the products participants currently use; or a THC reduction + 1:1 THC:CBD group (n=75), also including tailored THC concentrations as in the first group but with CBD added in a 1:1 THC:CBD ratio. Within each Study 2 treatment group, participants will be randomly assigned on a 1:1 basis to either start the 12-week treatment after a 2-week baseline or a 6-week baseline so we can examine participant naturalistic cannabis use before introducing the new product. **Both studies** involve assessments weekly and bi-weekly throughout a 12-week treatment phase, and at 3- (post-treatment), 6-, 9, and 12-months post-baseline. **Primary outcomes** include clinical assessments of PTSD symptom severity, mood and anxiety symptoms, and suicidality. **Secondary measures** include (1) neurocognitive function; (2) overall health, sleep quality, pain, healthcare utilization, and quality of life; (3) individual differences in fear learning and extinction associated with PTSD symptom severity; (4) saliva for DNA analysis to examine genetic and epigenetic markers associated with the endocannabinoid system; and, (5) urine, blood, and saliva samples to quantify levels of endocannabinoids and their metabolites (e.g., anandamide [AEA] and 2-AG), as well as THC and CBD and their metabolites, to examine whether these levels vary as a function of THC:CBD dose mixtures and differentially affect outcomes. Data will be analyzed to determine which dose conditions might be associated with the outcome measures. These data will be used to (1) develop a predictive algorithm that will help determine personalized profiles of patients who may be at increased risk for suicide; and, (2) develop a profile of who might most benefit from cannabinoid therapeutics.

**1). Project Milestones**

Study 1 and Study 2 Protocols have been revised and finalized in accordance with discussion with CRA/LARA.

- **Project Progress**

We continue to update our project website ([www.warriorCARE.net](http://www.warriorCARE.net)) regularly. Our studies are also in the process of being listed on ClinicalTrials.gov, which also provides contact information to enhance referral efforts.

Our recruiter continues to maintain contact with Veteran-related organizations we can approach for referrals and events like job fairs, where we can rent exhibition booths for our research staff to answer questions, provide information, conduct initial screening interviews and schedule in-person screening. We also continue to check in with the Veterans on our waitlist, ensuring we can ramp up recruitment quickly once all regulatory requirements are completed.

The FDA IND application was submitted in late June and we received an IND number for the cannabis formulations needed for the trial. Within the 30-day review period, however, we received a Clinical Hold notice, which prevents us from starting the trial just yet. We expect to receive detailed information from the FDA regarding the cause of the hold on or before July 23, 2024. Once we receive their documented concerns we will submit a response to resolve the issues as quickly as possible. Any protocol changes will be submitted for approval by the WSU IRB, as well.

The DEA Schedule I Protocols will be submitted to the DEA for approval as soon as the clinical hold is lifted and we have IRB approval of any required protocol changes.

**• Noteworthy Accomplishments – Identify and describe any milestones reached or noteworthy accomplishments completed during the period.**

We received IRB approval for the one-year continuation of the revised Study 2 (TRS) protocol. We are also continuing our ongoing edits of regulatory documentation, including updating our clinicaltrial.gov entries for this project, and submitted an IRB amendment to address minor changes to consent forms and questionnaires.

The WarriorCARE van is being equipped for phlebotomy and physiological monitoring during home visits during the clinical trial.

We will be using REDCap data capture for data collection and participant monitoring and have been creating all study forms and measures for this program. This process is almost complete.

Research staff is continuing to train on all procedures and prepare protocols for all procedures.

All WSU IRB approvals are up-to-date.

**2). Delays – Brief description of problems or delays, real or anticipated, which should be brought to the attention of the Grant Administrator.**

Until we begin recruitment operations, we continue to operate under reduced salary support for research staff members.

**3). Statement concerning any significant deviation from previously agreed-upon Statement of Work.**

N/A

4). Financial expenditures of grant money and other contributions to the project, in-kind and/or direct funding.

Wayne State University: Veteran Marijuana Research 2021 Grant  
Title: Investigating the Impact of Cannabinoids on Veterans' Behavioral Health

CATEGORY	TOTAL BUDGET	Expenses-thru 6/30/24	% of Budget Spent
Personnel/Fringe	3,925,223	1,205,552	
Equipment	129,404	58,684	
Supplies/Other	2,282,480	63,180	
Computers	45,575	9,321	
Travel	-	41	
<b>DIRECT TOTALS</b>	<b>6,382,682</b>	<b>1,336,778</b>	<b>20.94%</b>
Indirect Costs- 10%	638,268	133,678	
<b>BUDGET TOTALS</b>	<b>7,020,950</b>	<b>1,470,456</b>	<b>20.94%</b>

Attachments and Other Materials – Provide project materials developed and implemented during the reporting period (e.g. newspaper articles, newspaper advertisements, forms, brochures, announcements, studies, reports, analyses, audits, etc.).”

N/A

Respectfully submitted,



Leslie H. Lundahl, PhD  
Lead/Contact Principal Investigator



David M. Ledgerwood, PhD  
Co-Principal Investigator

July 15, 2024



Sponsored Program Administration  
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FINANCIAL STATEMENT

Agency	WSU Index No.	Report Period		Date
State of Michigan Dept of Licensing & Regulation	370718M & 380156SUB	04/01/24	Thru 06/30/24	07/15/24
Title:	Grant Code	Fund Code:	23T1C1	Project Period
Veterans Marijuana Research 2021	23T1C	Org. Code:	06CMN1	08/16/21 Thru 07/31/24
Principal Investigator	Final	Reporting No.	Grant/Contract No.	
Dr. Leslie H. Lundahl	NO	9	VMR202101	

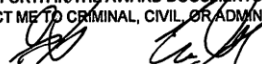
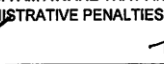

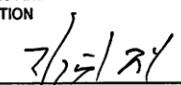
CATEGORY	EXPENDITURES		AGREEMENT	
	Current Period	Cumulative	Budget	Balance
Salaries & Wages	\$51,899.34	\$946,179.96	\$3,080,771.00	\$2,134,591.04
Fringe Benefits	\$14,305.70	\$259,372.07	\$844,452.00	\$585,079.93
Travel	\$0.00	\$40.61	\$0.00	(\$40.61)
Supplies & Materials	\$1,519.68	\$72,500.66	\$2,328,055.00	\$2,255,554.34
General Expenses	\$0.00	\$0.00	\$0.00	\$0.00
Equipment	\$0.00	\$58,684.44	\$129,404.00	\$70,719.56
Tuition	\$0.00	\$0.00	\$0.00	\$0.00
ROUNDING				
TOTAL DIRECT	\$67,724.72	\$1,336,777.74	\$6,382,682.00	\$5,045,904.26
Indirect Costs Rate: 10.00%	\$6,772.47	133,677.78	\$638,268.00	\$504,590.22
TOTAL EXPENDITURES	\$74,497.19	\$1,470,455.52	\$7,020,950.00	\$5,550,494.48

STATUS OF REVENUE		OUTSTANDING INVOICES		
Previously Reported	\$1,395,958.33	Date	Invoice No.	Amount
Current Billing	\$74,497.19			
Total Expenditures	\$1,470,455.52			
Total Payments to Date	\$3,510,475.00			
Outstanding Amount	(\$2,040,019.48)			
		Total \$0.00		

CERTIFICATION: BY SIGNING THIS REPORT, I CERTIFY TO THE BEST OF MY KNOWLEDGE AND BELIEF THAT THE REPORT IS TRUE, COMPLETE, AND ACCURATE, AND THE EXPENDITURES, DISBURSEMENTS, AND CASH RECEIPTS ARE FOR THE PURPOSES AND INTENT SET FORTH IN THE AWARD DOCUMENTS. I AM AWARE THAT ANY FALSE, FICTITIOUS, OR FRAUDULENT INFORMATION MAY SUBJECT ME TO CRIMINAL, CIVIL OR ADMINISTRATIVE PENALTIES (U.S. CODE, TITLE 18, SECTION 1001)

NAME: Marlene Ermo, Senior Director of Sponsored Program Administration      DATE: 7/15/24

7/15/2024