DEPARTMENT OF THE AIR FORCE
59TH MEDICAL WING (AETC)
JOINT BASE SAN ANTONIO - LACKLAND TEXAS

30 MAY 2017

MEMORANDUM FOR ST
ATTN: SANDRA VALTIER

FROM: 59 MDW/SGVU

SUBJECT: Professional Presentation Approval

1. Your paper, entitled **Impact of Juvenile Cannabinoid Receptor Targeting on Adult Restrictive-Repetitive Behaviors and Cytokine Expression** presented at/published to **Society of Neuroscience, Washington, DC, 11-15 November 2017** in accordance with MDWI 41-108, has been approved and assigned local file #**17240.**

2. Pertinent biographic information (name of author(s), title, etc.) has been entered into our computer file. Please advise us (by phone or mail) that your presentation was given. At that time, we will need the date (month, day and year) along with the location of your presentation. It is important to update this information so that we can provide quality support for you, your department, and the Medical Center commander. This information is used to document the scholarly activities of our professional staff and students, which is an essential component of Wilford Hall Ambulatory Surgical Center (WHASC) internship and residency programs.

3. Please know that if you are a Graduate Health Sciences Education student and your department has told you they cannot fund your publication, the 59th Clinical Research Division may pay for your basic journal publishing charges (to include costs for tables and black and white photos). We cannot pay for reprints. If you are a 59 MDW staff member, we can forward your request for funds to the designated Wing POC at the Chief Scientist's Office, Ms. Alice Houy, office phone: 210-292-8029; email address: alice.houy.civ@mail.mil.

4. Congratulations, and thank you for your efforts and time. Your contributions are vital to the medical mission. We look forward to assisting you in your future publication/presentation efforts.

FOR LINDA STEEL-GOODWIN, Col, USAF, BSC
Director, Clinical Investigations & Research Support

PROCESSING OF PROFESSIONAL MEDICAL RESEARCH/TECHNICAL PUBLICATIONS/PRESENTATIONS

INSTRUCTIONS

USE ONLY THE MOST CURRENT 59 MDW FORM 3039 LOCATED ON AF E-PUBLISHING

1. The author must complete page two of this form:
   a. In Section 2, add the funding source for your study [e.g., 59 MDW CRD Graduate Health Sciences Education (GHSE) (SG5 O&M); SG5 R&D; Tri-Service Nursing Research Program (TSNRP); Defense Medical Research & Development Program (DMRDP); NIH; Congressionally Directed Medical Research Program (CDMRP) ; Grants; etc.]

   b. In Section 2, there may be funding available for journal costs, if your department is not paying for figures, tables or photographs for your publication. Please state "YES" or "NO" in Section 2 of the form, if you need publication funding support.

2. Print your name, rank/grade, sign and date the form in the author's signature block or use an electronic signature.

3. Attach a copy of the 59 MDW IRB or IACUC approval letter for the research related study. If this is a technical publication/presentation, state the type (e.g. case report, QA/QI study, program evaluation study, informational report/briefing, etc.) in the "Protocol Title" box.

4. Attach a copy of your abstract, paper, poster and other supporting documentation.

5. Save and forward, via email, the processing form and all supporting documentation to your unit commander, program director or immediate supervisor for review/approval.

6. On page 2, have either your unit commander, program director or immediate supervisor:
   a. Print their name, rank/grade, title; sign and date the form in the approving authority's signature block or use an electronic signature.

7. Submit your completed form and all supporting documentation to the CRD for processing (59crdpubspres@us.af.mil). If you have any questions or concerns, please contact the 59 CRD/ Publications and Presentations Section at 292-7141 for assistance.

8. The 59 CRD/Publications and Presentations Section will route the request form to clinical investigations, 502 ISG/JAC (Ethics Review) and Public Affairs (59 MDW/PA) for review and then forward you a final letter of approval or disapproval.

9. Once your manuscript, poster or presentation has been approved for a one-time public release, you may proceed with your publication or presentation submission activities, as stated on this form. **Note:** For each new release of medical research or technical information as a publication/presentation, a new 59 MDW Form 3039 must be submitted for review and approval.

10. If your manuscript is accepted for scientific publication, please contact the 59 CRD/Publications and Presentations Section at 292-7141. This information is reported to the 59 MDW/CC. All medical research or technical information publications/presentations must be reported to the Defense Technical Information Center (DITC). See 59 MDWI 41-108, *Presentation and Publication of Medical and Technical Papers,* for additional information.

NOTE: All abstracts, papers, posters, etc., should contain the following disclaimer statement:
"The views expressed are those of the [author(s)] [presenter(s)] and do not reflect the official views or policy of the Department of Defense or its Components"

NOTE: All abstracts, papers, posters, etc., should contain the following disclaimer statement for research involving humans:
"The voluntary, fully informed consent of the subjects used in this research was obtained as required by 32 CFR 219 and DODI 3216.02_AFI 40-402."

NOTE: All abstracts, papers, posters, etc., should contain the following disclaimer statement for research involving animals, as required by AFMAN 40-401_IP :
"The experiments reported herein were conducted according to the principles set forth in the National Institute of Health Publication No. 80-23, Guide for the Care and Use of Laboratory Animals and the Animal Welfare Act of 1966, as amended."

PROCESSING OF PROFESSIONAL MEDICAL RESEARCH/TECHNICAL PUBLICATIONS/PRESENTATIONS

1. TO: CLINICAL RESEARCH	2. FROM: (Author's Name, Rank, Grade, Office Symbol)	3. GME/GHSE STUDENT:	4. PROTOCOL NUMBER:
	Sandra Valtier/GS13/ST	☐ YES ☒ NO	13021x

5. PROTOCOL TITLE: (**NOTE:** For each new release of medical research or technical information as a publication/presentation, a new 59 MDW Form 3039 must be submitted for review and approval.)

Stress, Cannabinoid and Serotonergic Interactions in Social Withdrawal and Impulsivity

6. TITLE OF MATERIAL TO BE PUBLISHED OR PRESENTED:

Impact of juvenile cannabinoid receptor targeting on adult restrictiverepetitive behaviors and cytokine expression

7. FUNDING RECEIVED FOR THIS STUDY? ☒ YES ☐ NO FUNDING SOURCE:

8. DO YOU NEED FUNDING SUPPORT FOR PUBLICATION PURPOSES: ☐ YES ☒ NO

9. IS THIS MATERIAL CLASSIFIED? ☐ YES ☒ NO

10. IS THIS MATERIAL SUBJECT TO ANY LEGAL RESTRICTIONS FOR PUBLICATION OR PRESENTATION THROUGH A COLLABORATIVE RESEARCH AND DEVELOPMENT AGREEMENT (CRADA), MATERIAL TRANSFER AGREEMENT (MTA), INTELLECTUAL PROPERTY RIGHTS AGREEMENT ETC.?

☐ YES ☒ NO **NOTE:** If the answer is YES then attach a copy of the Agreement to the Publications/Presentations Request Form.

11. MATERIAL IS FOR: ☒ DOMESTIC RELEASE ☐ FOREIGN RELEASE

CHECK APPROPRIATE BOX OR BOXES FOR APPROVAL WITH THIS REQUEST. ATTACH COPY OF MATERIAL TO BE PUBLISHED/PRESENTED.

☐ 11a. PUBLICATION/JOURNAL (List intended publication/journal.)

☐ 11b. PUBLISHED ABSTRACT (List intended journal.)

☐ 11c. POSTER (To be demonstrated at meeting: name of meeting, city, state, and date of meeting.)

☐ 11d. PLATFORM PRESENTATION (At civilian institutions: name of meeting, state, and date of meting.)

☒ 11e. OTHER (Describe: name of meeting, city, state, and date of meeting.)
Society for Neuroscience, Washington DC, 11-15 Nov 2017

12. EXPECTED DATE WHEN YOU WILL NEED THE CRD TO SUBMIT YOUR CLEARED PRESENTATION/PUBLICATION TO DTIC
NOTE: All publications/presentations are required to be placed in the Defense Technical Information Center (DTIC).

DATE	

13. 59 MDW PRIMARY POINT OF CONTACT (Last Name, First Name, M.I., email)	14. DUTY PHONE/PAGER NUMBER
Valtier, Sandra sandra.valtier.civ@mail.mil	292-7871

15. AUTHORSHIP AND CO-AUTHOR(S) List in the order they will appear in the manuscript.

LAST NAME, FIRST NAME AND M.I.	GRADE/RANK	SQUADRON/GROUP/OFFICE SYMBOL	INSTITUTION (If not 59 MDW)
a. Primary/Corresponding Author M. Leonard			Volcker Biomed
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e. H. Xia		CAMD/59thMDW/ST	
f. S. T. Schultz			UTHSCSA

I CERTIFY ANY HUMAN OR ANIMAL RESEARCH RELATED STUDIES WERE APPROVED AND PERFORMED IN STRICT ACCORDANCE WITH 32 CFR 219, AFMAN 40-401_IP, AND 59 MDWI 41-108. I HAVE READ THE FINAL VERSION OF THE ATTACHED MATERIAL AND CERTIFY THAT IT IS AN ACCURATE MANUSCRIPT FOR PUBLICATION AND/OR PRESENTATION.

16. AUTHOR'S PRINTED NAME, RANK, GRADE	17. AUTHOR'S SIGNATURE	18. DATE
Sandra Valtier, PhD	VALTIER.SANDRA.1230996403	May 10, 2017
19. APPROVING AUTHORITY'S PRINTED NAME, RANK, TITLE	20. APPROVING AUTHORITY'S SIGNATURE	21. DATE
Kevin Steel, Lt Col, USAF, MC Dep Chief Scientist	STEEL.KEVIN.E.1162266558	May 10, 2017

PROCESSING OF PROFESSIONAL MEDICAL RESEARCH/TECHNICAL PUBLICATIONS/PRESENTATIONS

1st ENDORSEMENT (59 MDW/SGVU Use Only)

TO: Clinical Research Division 59 MDW/CRD Contact 292-7141 for email instructions.	22. DATE RECEIVED May 10, 2017	23. ASSIGNED PROCESSING REQUEST FILE NUMBER 17240
24. DATE REVIEWED		25. DATE FORWARDED TO 502 ISG/JAC

26. AUTHOR CONTACTED FOR RECOMMENDED OR NECESSARY CHANGES: ☐ NO ☐ YES If yes, give date. _____ ☐ N/A

27. COMMENTS ☒ APPROVED ☐ DISAPPROVED

28. PRINTED NAME, RANK/GRADE, TITLE OF REVIEWER	29. REVIEWER SIGNATURE	30. DATE
ANNEKE C. BUSH, GS-14, Clinical Research Administrator	BUSH.ANNEKE.C.1042980389 Digitally signed by BUSH.ANNEKE.C.1042980389 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USAF, cn=BUSH.ANNEKE.C.1042980389 Date: 2017.05.25 14:18:20 -05'00'	May 25, 2017

2nd ENDORSEMENT (502 ISG/JAC Use Only)

31. DATE RECEIVED	32. DATE FORWARDED TO 59 MDW/PA

33. COMMENTS ☐ APPROVED (In compliance with security and policy review directives.) ☐ DISAPPROVED

34. PRINTED NAME, RANK/GRADE, TITLE OF REVIEWER	35. REVIEWER SIGNATURE	36. DATE

3rd ENDORSEMENT (59 MDW/PA Use Only)

37. DATE RECEIVED	38. DATE FORWARDED TO 59 MDW/SGVU
May 25, 2017	May 25, 2017

39. COMMENTS ☒ APPROVED (In compliance with security and policy review directives.) ☐ DISAPPROVED

40. PRINTED NAME, RANK/GRADE, TITLE OF REVIEWER	41. REVIEWER SIGNATURE	42. DATE
Kevin Iinuma, SSgt/E-5, 59 MDW Public Affairs	Digitally signed by IINUMA.KEVIN.MITSUGU.1296227613 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USAF, cn=IINUMA.KEVIN.MITSUGU.1296227613 Date: 2017.05.25 15:01:23 -05'00'	May 25, 2017

4th ENDORSEMENT (59 MDW/SGVU Use Only)

43. DATE RECEIVED	44. SENIOR AUTHOR NOTIFIED BY PHONE OF APPROVAL OR DISAPPROVAL ☐ YES ☐ NO ☐ COULD NOT BE REACHED ☐ LEFT MESSAGE

45. COMMENTS ☐ APPROVED ☐ DISAPPROVED

46. PRINTED NAME, RANK/GRADE, TITLE OF REVIEWER	47. REVIEWER SIGNATURE	48. DATE

Control/Tracking Number: 2017-S-15970-SfN
Activity: Scientific Abstract
Current Date/Time: 5/5/2017 11:06:08 AM

Impact of juvenile cannabinoid receptor targeting on adult restrictive-repetitive behaviors and cytokine expression

AUTHOR BLOCK: M. LEONARD[1], L. FERREIRA[2], N. A. WITT[2], C. AMAYA[1], H. XIA[3], S. T. SCHULTZ[2], *G. G. GOULD[2];
[1]Voelcker Biomed. Res. Acad., [2]Physiol., UT Hlth., San Antonio, TX; [3]CAMD, 59th Med. Wing Sci. and Technol., San Antonio, TX

Abstract:
Restrictive-repetitive behaviors are a core autism symptom that can be modeled in mice for behavioral pharmacology studies. Marble burying is an index of repetitive behavior that is sensitive to sedatives. In prior studies, administration of WIN55,212-2 (0.1 mg/kg), a cannabinoid receptor (CB1 and CB2) agonist, attenuated burying. Yet marble burying captures only "lower order" repetition, paralleling stereotopies like repetitive movements or manipulation of objects. To examine higher order restrictive "perseverative" behaviors such as insistence on sameness (narrow interests), cognitive flexibility or "reversal learning" tests provide more insight. The water T-maze for mice is modified approach to measure potential efficacy of therapeutics to this end. The test is for a position habit reinforced by successfully locating a platform to escape from water. Following acquisition, the platform position is changed to assess reversal learning. Since the CB_1 agonist WIN 55,212-2 acutely suppressed burying, we hypothesized targeting CB_1 and/or CB_2 receptors in adolescence might persistently alter burying and reversal learning. We compared effects of juvenile sub-chronic exposures to cannabinoid agonists, inverse agonists, and endocannabinoid clearance (FAAH) inhibitors in water T-maze and marble burying in adulthood. We found the cannabinoid agonist WIN 55,212-2 delayed habit acquisition. Mice administered FAAH inhibitors such as URB597 or acetaminophen exhibited delays in reversal learning, with no reduction in marble burying. Treatment with the CB1 inverse-agonist AM251 accelerated reversal. In a pilot study, serum collected after behavior was used for cytokine and chemokine measures using a Biorad Bio-plex mouse cytokine 23-plex panel. Eotxain levels, which inhibit neurogenesis, were high in C57BL6 treated as juveniles with >100 mg/kg acetaminophen. These mice also had elevated

TNFalpha and G-CSF, which act as granulocyte stimulation factors. By contrast eotaxin levels were low and along with G-CSF unaffected by acetaminophen, while TNFalpha expression was reduced in acetaminophen treated BTBR mice relative to controls. Studies to determine if these effects can be diminished by adipose derived mesenchymal stem cell treatments are ongoing.
The views expressed are those of the [author(s)] [presenter(s)] and do not reflect the official views or policy of the Department of Defense or its Components. The experiments reported herein were conducted according to the principles set forth in the National Institute of Health. Publication No. 80-23, Guide for the Care and Use of Laboratory Animals and the Animal Welfare Act of 1966m as amended.
:

Presentation Preference (Complete): Poster Only
Linking Group (Complete): None selected
Theme and Topic (Complete): A.09.a. Animal models ; G.08.l. Cannabinoids: Neural mechanisms and addiction
Nanosymposium Information (Complete):
Keyword (Complete): COGNITIVE ; WATER MAZE ; CANNABINOID
Support (Complete):
Support: Yes
Grant/Other Support: : Sub-award from Institute for Integration of Medicine and Science UL1RR025767
Grant/Other Support: : JCP5 SAWG contracts

Special Requests (Complete):
Would you be interested in being considered for a dynamic poster?: No, I am not interested in presenting a Dynamic Poster
Is the submitting author of this abstract also a senior author?: Yes
Is the first (presenting) author of this abstract a high school or undergraduate student?: High School
Religious Conflict?: No Religious Conflict
Additional Conflict?: No

Status: Complete