INSTITUTIONAL BIOSAFETY COMMITTEE
MEETING MINUTES

DATE: April 15, 2026
TIME: 3:00 PM
LOCATION: Virtual Meeting via Microsoft Teams

The meeting for the University of South Carolina's Institutional Biosafety Committee (IBC) was called to order by the Chair, Dr. Doug Pittman, at 3:01pm.

Approved IBC minutes will be posted on the university's IBC website. This website includes meeting dates, times, locations, and guidance for the public to request to attend an IBC meeting.

MEETING ATTENDANCE

IBC Member	Member Role / Position / Department	Attendance
Doug Pittman	IBC Chair; Director, Graduate Studies in Drug Discovery & Biomedical Sciences	☑
Sherika Smith	Biological Safety Officer in Environmental Health & Safety	☑
Shayne Barlow	Animal Expert; Associate Vice President for Research & Director, DLAR	☑
Beth Krizek	Plant Expert; Professor in Biological Sciences	☑
Sujit Pujhari	Viral Vector Core Director in Pharmacology, Physiology & Neuroscience	ABSENT
Jason Kubinak	Associate Professor in Pathology, Microbiology, and Immunology	☑
Michael Shtutman	Associate Professor in Drug Discovery & Biomedical Sciences	ABSENT
Daping Fan	Professor in Cell Biology and Anatomy	ABSENT
Sean Norman	Director, Molecular Microbial Ecology Lab in Environmental Health Sciences	☑
Anna Blenda	Clinical Professor in Biomedical Sciences at USC SOM Greenville	☑
William Jackson	Professor/Chair in Biological, Environmental & Earth Sciences at USC Aiken	☑
Anita Nag	Associate Professor of Biochemistry at USC Upstate	☑
Emily Webb	Assistant Professor of Genetics & Molecular Biology at USC Beaufort	☑
Amanda Moore	Community member; Special Pathogens at SC Department of Public Health	☑
Ryan McCormick	Community member; Infectious Diseases Clinical Pharmacist at Prisma Health	☑
Kris Kaigler	Research Specialist (technical staff) in Pharmacology, Physiology & Neuroscience	☑

* Mark Robbins (Research Safety Bureau Chief & Non-Voting IBC Contact Person)

I. APPROVAL OF PREVIOUS MEETING MINUTES

IBC minutes from the meeting on February 18, 2026, were approved by committee vote.

- Votes: For = 13 / Against = 0 / Abstain = 0

II. ANNOUNCEMENTS

A. IBC CHAIR

i. The URL for our IBC website that now displays our IBC meeting minutes was provided to the NIH OSP as required in their registration management system.

B. BIOLOGICAL SAFETY OFFICER

i. The University's IBC annual report was approved by the NIH OSP on 3/24/2026.

III. OLD BUSINESS

No old business was discussed.

IV. PROTOCOL REVIEWS

Protocol #	1-0156-0426
Protocol Type	Renewal
PI Name	Susan Wood
Project Title	Using AAV to Manipulate Microglia and Other Cell Types
Section of NIH Guidelines	Section III-D-1 & III-D-4, Section III-E-1
Characteristics of Agent(s) or Material(s)	AAV vectors used to express designer receptors exclusively activated by designer drugs (DREADDS) in rats. The genes targeted by the virus are microglial specific. There are no known off-target effects or tumorigenic pathology associated with this wildtype AAV serotype. Rats are a permissive host of AAV and cMG. Rodents housed at BL2 containment for 72 hours after injection of AAV, then moved to a new cage at BL1.
Manipulations/Procedures & Risk Assessment	AAV will be injected via stereotaxic surgery directly into the brain region of interest in rats using a blunt tipped Hamilton syringe (500nL using a titer of $\geq 1\times10^{13}$ vg/mL). Upon completion of the study, the brain

<table>
<tr><td></td><td>will be extracted, and the region of interest will be utilized for molecular analysis, requiring the use of a razor blade to block the brain. All contaminated material will be placed in a durable, leak proof container until sterilization and disposal. Cages will be placed in biohazard bags before being autoclaved. All equipment used to extract brains will be washed and sterilized prior to reuse.

Potential risk of exposure while injecting the AAV due to opening of small volume aliquots (10uL/aliquot). Stereotaxic surgeries, where sharps are used to extract the brain, are a known hazard and injuries are possible while working with AAV. All personnel involved are trained on proper PPE and proper use of tools to mitigate these risks. Rarely AAV can integrate into the human genome. However, AAV vectors are replication-incompetent and are not known to cause disease in humans.</td></tr>
<tr><td>Source(s) and Nature of Nucleic Acid Sequences

Transgene Expression & Function of Protein</td><td>The source of nucleic acid sequences is synthetic.

The functions of proteins produced include fluorescent reporters and inhibitory G-protein-coupled receptors.</td></tr>
<tr><td>Host(s) & Vector(s) Used</td><td>AAV vectors – pAAV-CD68-hM4D(Gi)-mCherry (AAV1), pAAV-CD68-hM4D(Gi)-mCherry (Virus associated DNA), AAV1-CMV-GFP, and cMGAAV-CMV-GFP</td></tr>
<tr><td>Viral Vectors</td><td>Adeno-Associated Virus (AAV) from a supplier.</td></tr>
<tr><td>Biosafety Level(s)</td><td>BL1/BL2 (rats are housed at BL2 containment for 72 hours after AAV injection, then lowered to BL1 containment after cage change).</td></tr>
<tr><td>Work Practices</td><td>Verified proper work practices for experiments conducted at BL1, BL2.</td></tr>
<tr><td>Laboratory Facilities</td><td>Verified proper lab facilities for experiments conducted at BL1, BL2.</td></tr>
<tr><td>Training and Expertise of Research Personnel</td><td>PI provided CV/biosketch for IBC to verify PI’s training and expertise.

PI completed training on NIH Guidelines for Principal Investigators.

PI indicated plans to make biosafety protocols available to lab staff and train lab staff in safe work practices and procedures for incidents.

PI verified lab personnel that will administer viable recombinant or synthetic nucleic acid molecule-modified microorganisms on whole animals received training to strictly follow all procedures in the SOP.</td></tr>
<tr><td>IACUC Approval</td><td><table><tr><th>IACUC Approval Number</th><th>IACUC Approval Date</th></tr><tr><td>2783-102070-092925</td><td>02/02/2026</td></tr></table></td></tr>
<tr><td>Major Discussion Points</td><td>PI clarified genes of interest and no potential off-target effects. Also indicated AAV constructs contain transgenes that do not encode either a potentially tumorigenic gene product or a toxin molecule.

PI added the volume of viral inoculum and how it will be transported.

Added risk of sharps exposure when injecting AAV and extracting brain.</td></tr>
</table>

Motion to Approve	A motion was made to approve this protocol, pending a minor edit for the PI to verify that HPLC waste will not contain any viable virus.			
	Votes For:	Votes Against:	Abstained:	Conflict of Interest:
	13	0	0	None

Protocol #	1-0157-0426
Protocol Type	Renewal
PI Name	Mitzi Nagarkatti
Project Title	Breeding of Knockout and Transgenic Mice for Studies Approved in Animal Protocols
Section of NIH Guidelines	Section III-E-3, Section III-F-1 & III-F-8
Characteristics of Agent(s) or Material(s)	This protocol includes the use of transgenic and knockout mice for breeding purposes. No recombinant DNA molecules or vectors containing organisms are used. Breeding of transgenic and knockout mice will not lead to personnel exposure when handling these animals.
Manipulations/Procedures & Risk Assessment	Transgenic and knockout mice will be used to understand the role of various genes involved in the development and function of the cells of the immune system of the body. Mice are bred in the animal facility. The breeding involves mating of male and female mice having either identical transgenic or knockout gene specificity or different transgenic or knockout gene specificity. For genotyping purposes, synthetic oligonucleotide probes are used for in vitro experiments using cells obtained from these mice. All mice are handled and contained at BL1 containment. Waste decontamination and disposal will include autoclaving waste and incineration of animal carcasses.
Biosafety Level(s)	BL1 (breeding and use of transgenic mice)
Work Practices	Verified proper work practices for experiments conducted at BL1.
Laboratory Facilities	Verified proper lab facilities for experiments conducted at BL1.
Training and Expertise of Research Personnel	PI provided CV/biosketch for IBC to verify PI's training and expertise. PI completed training on *NIH Guidelines* for Principal Investigators. PI indicated plans to make biosafety protocols available to lab staff and train lab staff in safe work practices and procedures for incidents.
IACUC Approval	**IACUC Approval Number** / **IACUC Approval Date** 2787-102079-111925 / 11/19/2025 2788-102081-112125 / 11/21/2025

Major Discussion Points	PI attached her updated CV/biosketch to this IBC protocol renewal. PI completed *NIH Guidelines* renewal training (expired on 4/12/2026).			
Motion to Approve	A motion was made to approve this protocol as is			
	Votes For: 13	Votes Against: 0	Abstained: 0	Conflict of Interest: None

Protocol #	1-0158-0426
Protocol Type	Renewal
PI Name	Holly Lavoie
Project Title	Regulation of Steroidogenic Genes in Ovarian Cells
Section of NIH Guidelines	Section III-D-1; Section III-F-1, III-F-2, III-F-3, III-F-5 & III-F-8
Characteristics of Agent(s) or Material(s)	The recombinant DNA used will include the following: Plasmids containing partial or full-length coding sequences (cDNAs) for human or pig proteins. Plasmids containing genomic DNA regions of human or pig or mouse corresponding to the promoter regions of their downstream genes. Plasmids with renilla or firefly luciferase genes. Plasmids are reamplified in DH5alpha *E. coli*. Replication-deficient adenoviral constructs are used. The adenoviral construct is replication-deficient through E1/E3 deletion. Adenovirus contains a CMV promoter to allow expression of inserted cDNA for mouse AKT1 protein. The adenoviral construct cannot replicate in normal cells. If an adenovirus does infect a living cell(s), the protein would be made for a while then the virus would be broken down by the cell over time and would not have an long-term effect. The adenoviruses have not been found to produce high levels of protein for more than a few days. If personnel have an adenoviral infection, there is a very small risk that exposure could result in recombination leading to restoration of a replication competent virus (RCV). To detect RCV, the supplier performs testing where they utilize non-complementary cells, which are incubated with viral stocks and monitored for cytopathic effects (CPE) and/ or plaque formation. The lab can monitor 1EA presence by PCR. None of the recombinant DNA used will result in genetic modification that would increase the pathogenicity of the agent.
Manipulations/Procedures & Risk Assessment	Plasmid DNA will be transfected into primary ovarian granulosa cells from pig, COS cells, Hela cells, or HEK293 cells, and depending on the type of plasmid and type of endpoint assay, either used to express a protein of interest or to assay transactivation ability of a promoter-luciferase construct. Adenoviral vectors will be infected into similar cell cultures to overexpress the protein of interest.

	Plastic Pasteur pipets are used for the cell culture work to aspirate media. Aerosols may be generated by pipetting as materials are transferred to cell culture media. Splashes may occur and will be cleaned with 70% ethanol or 10% bleach. All work will be performed in a biosafety cabinet until cells are lysed and DNA/RNA and proteins are denatured with lysis buffer or Trizol. Media waste will be treated with bleach solution to a final concentration of 10% bleach for at least 30 min before disposal. All disposable solid waste will be placed in the biohazard container and will be autoclaved. Exposure to recombinant DNA could occur while setting up experiments through mucous membranes, broken skin, ingestion and inhalation or contaminated sharps (if a plastic pipette breaks). Exposure will be minimized by personnel wearing disposable masks, gloves and lab coats, working in a biosafety cabinet, and using proper disinfection techniques such as bleaching of vessels and surfaces, 70% ethanol cleaning of surfaces, and autoclaving waste. Plasticware will be used instead of glassware. No needles will be used for experiments. The consequences of exposure are minimal. The adenoviral vectors could potentially infect an individual's cells if a person is exposed to viruses through culture media or aerosols while performing cell culture experiments. The virus is replication-deficient, so the infected cells could transiently express the inserts of the viruses which include certain transcription factors. Such infection could cause some irritation to the tissue but would not need treatment or present a serious health concern. Other cells like COS, Hela cells, or HEK293 cells may be infected with adenoviruses to make recombinant protein. All cells are lysed that have viral infection and none of these cells with virus are frozen for later propagation.
Source(s) and Nature of Nucleic Acid Sequences **Transgene Expression & Function of Protein**	The sources of nucleic acid sequences include human, pig, firefly, renilla, and mouse. The nature of nucleic acids and functions of proteins produced include transcription factors, intracellular lipid transport, fluorescent reporters, and enzyme signaling.
Host(s) & Vector(s) Used	Plasmids: puc19, pcDNA2, pcDNA3.1, pCMV6entry Host: DH5alpha *E. coli* Host: pig granulosa cells, COS1 cells, HELA cells, HEK293 cells, mouse MA-10 Leydig cells Adenovirus: mouse AKT1 Host: HEK293 cells, pig granulosa cells, COS1 cells, HELA cells, HEK293 cells, mouse MA-10 Leydig cells
Viral Vectors	Adenovirus from a supplier.
Biosafety Level(s)	BL1 (plasmid amplification in *E. coli* K-12 strains) BL2 (experiments with replication-deficient adenoviral vectors)

Work Practices	Verified proper work practices for experiments conducted at BL1, BL2.			
Laboratory Facilities	Verified proper lab facilities for experiments conducted at BL1, BL2.			
Training and Expertise of Research Personnel	PI provided CV/biosketch for IBC to verify PI's training and expertise. PI completed training on *NIH Guidelines* for Principal Investigators. PI indicated plans to make biosafety protocols available to lab staff and train lab staff in safe work practices and procedures for incidents.			
Major Discussion Points	PI clarified that transgenic rodents are no longer used in this project. PI clarified procedures for disposal of solid and liquid biohazard waste. PI added plasticware will be used instead of glass and no needles used. BSO verified biosafety cabinet was certified (overdue by one week).			
Motion to Approve	A motion was made to approve this protocol as is			
	Votes For: 13	Votes Against: 0	Abstained: 0	Conflict of Interest: None

Protocol #	1-0160-0426
Protocol Type	Renewal
PI Name	Kimberly Shorter
Project Title	Using siRNA for miR718 Upregulation in a Human Cell Line
Section of NIH Guidelines	Section III-F-1 & III-F-8
Characteristics of Agent(s) or Material(s)	Pre-made siRNAs used to control or upregulate expression of miR-718 in a human neuronal cell line. siRNA molecules will be combined with lipofectamine to enhance transfection capability for the siRNA molecules to cross the plasma membrane. RNA molecules are not stable in the environment and are not virulent or pathogenic. Physiological activity includes regulation of gene expression via miR-718.
Manipulations/Procedures & Risk Assessment	Lipofectamine is used to enhance efficacy of the siRNA transfection in cell culture. SH-SY5Y cells, a human neuronal cell model, are used and handled in a biosafety cabinet at BL2 containment. Cells will be ruptured in a biosafety cabinet using either lysis buffer or Trizol reagent to harvest RNA, DNA, and protein. These materials will be pipetted into cell culture via micropipettes and serological pipettes. Cells treated with the reagents will be kept in an incubator labeled as biohazard. Very low concentrations are used and will be diluted before treating cells via pipetting. A vacuum system is protected by HEPA filtration and used to suction waste into an enclosed container after these treatments. The

	enclosed container will have pure bleach added to it to a final concentration of 10% and will sit at least 30 minutes before disposal. Live, treated cells will be taken to a connected room for live-cell imaging and microscopy. Metabolic assays are performed using an enclosed metabolic analyzer. After microscopy or metabolic assays, cells will be taken back to the cell culture room, and all liquids will be suctioned into the vacuum system before cells are discarded. No sharps are used for experiments. A spill may be of concern if someone has a cut or open area of skin. Since the procedures will be conducted in a biosafety cabinet, inhalation and ingestion are not of concern. Lab coats and gloves will be worn while working in the biosafety cabinet and in the lab areas. Safety glasses/goggles will be worn when transporting cells outside of the biosafety cabinet to prevent a potential mucous membrane exposure.			
Source(s) and Nature of Nucleic Acid Sequences **Transgene Expression & Function of Protein**	The source of nucleic acid sequences is human. The nature of nucleic acids include regulation of mRNA expression of genes and oncogenes.			
Host(s) & Vector(s) Used	siRNA is transfected into SH-SY5Y (human neuronal model), HCN2 (human cortical neuron line), or Jurkat cells (human T-lymphocytes).			
Viral Vectors	None			
Biosafety Level(s)	BL2 (all cell culture work)			
Work Practices	Verified proper work practices for experiments conducted at BL2.			
Laboratory Facilities	Verified proper lab facilities for experiments conducted at BL2.			
Training and Expertise of Research Personnel	PI provided CV/biosketch for IBC to verify PI's training and expertise. PI completed training on *NIH Guidelines* for Principal Investigators. PI indicated plans to make biosafety protocols available to lab staff and train lab staff in safe work practices and procedures for incidents.			
Major Discussion Points	PI clarified the vacuum lines are protected with in-line HEPA filters. PI verified safety glasses are worn when transporting cells outside BSC.			
Motion to Approve	A motion was made to approve this protocol as is			
	<u>Votes For:</u> 13	<u>Votes Against:</u> 0	<u>Abstained:</u> 0	<u>Conflict of Interest:</u> None

V. <u>New Business / Additional Topics</u>

No new business was introduced.

VI. Review of Incidents

No new incidents were reported.

VII. Inspections/Ongoing Oversight

Susan Wood, Holly Lavoie, and Kimberly Shorter had no biosafety deficiencies during their most recent lab inspections.

Mitzi Nagarkatti corrected minor biosafety deficiencies identified during the most recent lab inspection.

VIII. IBC Training

No IBC training was conducted.

IX. Public Comments

No public comments were received.

X. Meeting Adjournment

The IBC meeting was adjourned at 3:51pm.