COLUMBIA UNIVERSITY
IN THE CITY OF NEW YORK

INSTITUTIONAL BIOSAFETY COMMITTEE

Minutes
Thursday, September 11th, 2025; 1:00PM
Teleconference

Present	Present	Excused
C. Aston	S. Morse (Chair)	L. Kam
H. Blumm	T. McConville	B. Karolewski
L. Butaud-Rebbaa	D. Ng	P. Muranski
C. Cameron	C. Pitoscia	E. Peterson
K. Crowley	E. Riber (Coordinator)	M. Quick
S. Hughes	A. Romanov	V. Racaniello
S. Joussef Pina	Y. Wojcicki	B. Ruotolo
J. Kaushal	M. Underwood	Q. Wang
J.J Miranda		
	Guests – Research administration personnel from the Icahn School of Medicine at Mt. Sinai and NYU Langone Health	

S. Morse convened the Institutional Biosafety Committee (the **Committee**) at 1:01pm.

S. Morse asked the Committee to approve the minutes of the August 7th, 2025 meeting.

- **The minutes were approved unanimously.**

S. Morse reminded the Committee of the Conflict of Interest Policy and asked all members to confirm that there were no conflicts of interest with regard to any of the protocols to be discussed at the meeting.

- **There were no conflicts of interest noted.**

DURC Review

- No protocols requiring DURC review were submitted to the Biosafety Officer or to the Committee since the previous meeting.

Human Gene Therapy

- No human use protocols were submitted to the Biosafety Office for review.

Biosafety Office Reviews

- No renewals for Coronavirus Research have been submitted to the Biosafety Office since the last meeting.

Coronavirus Research

- No new Coronavirus research proposals were received by the Biosafety Office since the previous meeting.

rDNA

Ten rDNA and infectious agent appendices requiring work at the BSL-1 containment level were presented and discussed. A table describing each BSL-1 Appendix A was shown to the Committee and is available at the Biosafety Office.

- Four appendices were returned to the investigator for further information as shown in a Table presented to the Committee describing the nature of each hold comment.
- After Discussion by the Committee, all BSL-1 Appendices were voted upon collectively and approved unanimously.

Twelve rDNA and infectious agent appendices requiring work at the BSL-2 containment level were presented and discussed. A table describing each BSL-2 Appendix A was shown to the Committee and is available at the Biosafety Office.

- Nine appendices were returned to the investigator for further information as shown in a Table presented to the Committee describing the nature of each hold comment.
- After Discussion by the Committee, all BSL-2 appendices were voted upon collectively and approved unanimously.

Announcements

- C. Aston reminded the committee of the web address for the IBC minutes public posting mandate under the NIH maximal transparency implementation (https://research.columbia.edu/ibc-meeting-minutes).
- C. Aston presented the NIH Biosafety Modernization Initiative (https://osp.od.nih.gov/nih-launches-comprehensive-effort-to-modernize-biosafety-framework/).
- C. Aston highlighted twenty-five Columbia innovations and ideas that changed the world (https://magazine.columbia.edu/article/25-columbia-ideas-and-innovations-changed-world).

NIH Compliance

- Guest Speaker Masahiro Yamashita discussed their ongoing research activities with HIV.
    - The Committee conducted a supplementary review of the activities under the research protocol. No applicable notifications to the NIH nor major actions were required for this research protocol.

rDNA Incidents

- There were no incidents reported to the Biosafety Office.

Action Items

Action Items from 09-11-25 IBC meeting		
Status	**Description**	**Group/Investigator**
N/A	**N/A**	**N/A**

With there being no further business S. Morse adjourned the meeting at 2:42pm. The next meeting will be held by teleconference on October 9, 2025.

2025 Meeting Calendar

Date
Thursday, January 16, 2025
Thursday, February 13, 2025
Thursday, March 13, 2025
Thursday, April 10, 2025
Thursday, May 8, 2025
Thursday, June 5, 2025
Thursday, July 10, 2025
Thursday, August 7, 2025
Thursday, September 11, 2025
Thursday, October 9, 2025
Thursday, November 6, 2025
Thursday, December 4, 2025

IBC Meeting: September 11, 2025

Table 1: Recombinant DNA proposals

Proposals for Work at BSL-1

	PI	Insert	Vector	Host	Animal Biosafety Level	NIH category	Use/Comments	Year	Protocol #	Appendix A
1	Axel, Richard	Halorhodopsin, Channelrhodopsin, Green fluorescent protein-Calmodulin-M13, Red fluorescent protein, PSAM, hM4Di, hM3dq	AAV	Mouse	ABSL-1	III-E-1	AAV microinjection into mouse brain.	Y1 M2	AC-AABL5568	BQVF4802
2	Denny, Christine	hsyn-GFP, RAM-mKate2	AAV	Mouse	ABSL-1	III-E-1	This work uses viral delivery of a transgenic plasmid for activity-dependent tagging across different brain regions.	Y1 M0	AC-AACI4901	BQVE7851
3	Gogos, Joseph	Gcamp7	AAV	Mouse	ABSL-1	III-E-1	pGP-AAV-syn-FLEX-jGCaMP7s-WPRE and pGP-AAV-syn-FLEX-jGCaMP7fWPRE are viruses that will enable calcium biosensing in the central nervous system of mice. The proteins they introduce are versions of GCaMP7 but they contain the same viral components. This is not a drug and does not come as a pharmaceutical grade compound.	Y1 M8	AC-AABG8556	BQVF7808
4	Kaler, Stephen	Copper transport gene CTR1	AAV	Mouse	ABSL-1	III-E-1	Recombinant AAV9-CTR1 is a replication-defective viral vector to be used in this protocol. Standard infection control protections will be used by the investigator handing this material.	Y1 M1	AC-AACE6754	BQVE7865
5	Kousteni, Stavroula	AAV8.2-hEF1a-hM4Di-mCherry-WPRE AAV8.2-hEF1a-hM3Dq-mCherry-WPRE	AAV	Mouse	ABSL-1	III-E-1	Stereotactic injections of inhibitory or stimulatory DREADDs encoded in adenoassociated viruses to study which areas of the brain and which specific neurons are required for LCN2 secretion after endotoxin challenge.	Y1 M3	AC-AABT8655	BOWF1250
6	Marlin, Bianca	YFP, NE2h, OT1.0	AAV	Mouse	ABSL-1	III-E-1	In this project, we aim to investigate how innate and learned responses to infant vocalizations are represented in the whole-brain of mice of different maternal experience. After conducting whole-brain activity assays and identifying a region(s) of interest, we will further pursue this region(s) with in vivo fiber photometry. In order to acquire activity-dependent fiber photometry recordings, animals must first be injected with fluorescent adeno-associated virus and implanted with an optical fiber cannulae. Prior to surgery, viruses will be stored as recommended by the procuring company. At the time of surgical injection, viruses will be delivered intracerebrally with an appropriate pair of pipette and nanoinjector, under sterile technique.	Y1 M0	AC-AABQ2550	BQVF3867
7	Marlin, Bianca	Either Channelrhodopsin, Halorhodopsin, GCaMP8, GFP, or RFP	AAV	Mouse	ABSL-1	III-E-1	This project aims to understand how the endogenous opioid system modulates the acquisition of maternal behaviors in mice. More specifically, we will investigate the beta-endorphin and mu opioid receptor to ask how this ligand receptor pair contribute to the development of maternal behavior. In its essence, this project seeks to understand the functional relationship between betaendorphinergic neurons in the arcuate nucleus of the hypothalamus and mu opioid receptor-expressing neurons in the medial preoptic area to influence the transitioning maternal brain. This requires studying complex circuitry, electrophysiology, and the behavioral outcomes of modulating the activity of both regions. To do that, we will use recombinant adeno-associated viruses to either perform synaptic tracing experiments, or to calcium indicators for fiber photometry or opsins for optogenetic manipulation.	Y1 M0	AC-AACE9750	BQVF4806
8	Obermeyer, Allie	fluorescent proteins (GFPs, RFPs, engineered FPs of varying colors), cas9 (for use in vitro or in mammalian cell culture), PETase, MHETase, tyrosinase, T7 RNA polymerase, cellulose binding proteins, lanmodulin, elastin like polypeptides, prothymosin-alpha and variants thereof, the disordered region of histone H5 and variants thereof, as well as genes encoding for various fusions of these proteins	E. coli, Komagataeibacter rhaeticus, Saccharomyces cerevisiae, Komagataella pastoris	In vitro	N/A	III-E-1	We use standard molecular biology techniques, including restriction digestion and ligation, Gibson assembly, and Golden Gate assembly, to construct plasmids for protein expression in bacteria (E. coli, K. rhaeticus) and yeast (S. cerevisiae, P. pastoris). We are typically producing fluorescent 'reporter' proteins (e.g. GFP and engineered variants), proteins capable of binding small molecules or ions of interest (e.g. lanmodulin), or enzymes (e.g. PETase, Cas9). We characterize the behavior of these proteins inside the bacteria (or yeast) as well as in vitro after purification from the microorganisms.	Y1 M0	LS-AAAD5201	BQVF7804
9	Quinzii, Catarina Maria	SDH/SUMO2	AAV	Mouse	ABSL-1	III-E-1	Testing the effects of over expressing SDH/SUMO2 in PS19 transgenic mice (a model of FTD). We will obtain mouse SDH/SUMO2 cDNA packed in AAV9 virus particle to inject in PS19 mice.	Y1 M0	AC-AACJ3952	BQVF4808
10	Shneider, Neil	TNPO1, UBQLN2, DNAJB6, and their variants with point-mutations	AAV	Mouse	ABSL-1	III-E-1	AAV vectors encoding several genes of interest will be administered via intracerebroventricular injections to transduce motor neurons of living animals to investigate their involvement in the pathological processes in ALS and assess their therapeutic potential.	Y1 M3	AC-AABI7552	BQSE8756

Proposals for work at BSL-2

	PI	Insert	Vector	Host	Animal Biosafety Level	NIH category	Use/Comments	Year	Protocol #	Appendix A
11	Abdus-Saboor, Ishmail	ChR2, GFP, mcherry, HM3Dq, Cre	AAV, LV, HSV	Mouse	ABSL-1 (Note 3)	III-E-1, III-D-1-a	The research goals of the Abdus-Saboor lab are to identify new genes and neural circuit mechanisms that govern pain and somatosensation, with the ultimate goal of identifying new therapeutic targets. To accomplish these goals we perform experiments using the mouse as a model organism. Our methodologies and manipulations consist of in vivo experimentation such as behavior, manipulation of neuronal activity with optogenetics, chemogenetics, and genetic ablation, and lastly recordings from the brain. Where applicable we use transgenic animals to manipulate neurons and we frequently inject AAV viruses into the brain for cell type specific modulation and measurement. We will also use replication-defective Herpes simplex viral vectors for tracing of neural innervation.	Y1 M7	AC-AABL6560	BQVF3800
12	Arpaia, Nicholas	Cre recombinase is being expressed AAV8 and AAV9 viral vectors; in AAV9, GFP is also expressed along with Cre recombinase.	AAV, Mouse-adapted Influenza A virus strains: A/PR8/34; WSN; X31, Citrobacter rodentium, Heligmosomoides polygyrus	Mouse	ABSL-2	III-E-1, III-D-1-a, III-F	The objective of our studies is to understand the mechanisms by which commensal bacteria influence mucosal immune responses in the gut and lung, and how these responses translate to the systemic health of the immune cells and impact the balance between pro and anti inflammatory responses. The goals are to determine how short-chain fatty acids (SCFA) promote anti inflammatory responses within mucosal tissues delineate how these responses influxes mucosal barrier maintenance and the resilience of barrier tissues to infections.	Y1 M0	AC-AABT2656	BQVF0801
13	Axel, Richard	Halorhodopsin, Channelrhodopsin, Green fluorescent protein-Calmodulin-M13, Red fluorescent protein, PSAM, hM4Di, hM3dq	AAV, GdRV	Mouse	ABSL-1 (Note 3)	III-E-1, III-D-1-a	AAV microinjection into mouse brain to express optogenetic effectors such as channelrhodopsin or halorhodopsin for mouse behavior. Rabies virus will be microinjected into the mouse brain for monosynaptic rabies tracing. The rabies virus we are proposing to use (CVS-N2cG) is pseudotyped with EnvA and is glycoprotein deficient (G-deleted), so it only binds to and directly infects cells which express the pseudoreceptor, TVA, and it can only "jump" one synapse, because it needs the glycoprotein expressed by the starter cells for transsynaptic transport.	Y1 M2	AC-AABM9568	BQVF4801
14	Chan, Edmond	Cas9, Cas12a, sgRNAs, Erbb2, GFP, mCherry, Luciferase	AV, LV	Mouse	ABSL-1 (Note 3)	III-D-1-a	We seek to understand the contributions of genetic alterations to oncogenesis and the vulnerabilities arising from these mutations. We will leverage CRISPR-based genetic alterations or cDNA to accomplish this goal. Lentivirus will be used accomplish these tasks. All lentivirus will be 3rd generation and replication incompetent.	Y1 M5	AC-AABT8654	BQVF3869
15	Doulatov, Sergei	OCT4 (transgene), KLF4 (transgene), SOX2 (transgene), MYC (transgene), HOXA9 (transgene), ERG (transgene), RORA (transgene), SOX4 (transgene), MYB (transgene), RUNX1 (transgene), HOXA5 (transgene), SF3B1 (editing), LMNB1 (transgene, sgRNA, shRNA), TP53 (transgene, sgRNA), STAG2 (sgRNA), DNMT3A (sgRNA), TET2 (sgRNA), GFP, BFP, mCherry	Pseudotyped LV, AAV, Sendai virus (SeV)	Mouse	ABSL-1 (Note 2)	III-E-1, III-D-1-a	We will use 3rd generation replication incompetent VSV-g pseudotyped lentiviral vectors for gene delivery or gene silencing in human hematopoietic stem and progenitor cells (HSPCs) and cell lines. We also use CRISPR/Cas9 and nonintegrating adeno-associated viruses (AAV) for gene editing in human HSPCs and cell lines. Human HSPCs are derived from umbilical cord blood, peripheral blood, and bone marrow, as well as from induced pluripotent stem cells (iPSCs) generated by episomal reprogramming of hematopoietic cells.	Y1 M0	AC-AACI0902	BQJK2508
16	Nectow, Alexander	hM3D(Gq), hM4D(Gi), hChR2(H134R), eArch3.0, eGFPL10, mCherry, eGFP, EYFP, Cre recombinase, Flp recombinase.	AAV, HSV, PRV, GdRV	Mouse	ABSL-1 (Note 3)	III-E-1, III-D-1-a	One goal is to use intersectional genetic approaches (e.g. Cre/Flp recombinase systems) to manipulate specific cell types in the mouse brainstem. This requires the injection of viruses carrying specific genetic cassettes (adeno-associated viruses). Designing/creating AAVs will require standard molecular cloning procedures. Furthermore, pseudorabies virus (PRV) will be used for tracing studies aimed at determining which neurons in the brain polysynaptically innervate peripheral tissue. HSV will be used to do polysynaptic anterograde tracing from peripheral tissue. Lastly, a pseudotyped, G-deleted rabies virus will be used for monosynaptic tracing experiments.	Y1 M11	AC-AABT8657	BQVF1802
17	Peng, Yueqing	eGFP, eYFP, tdTomato, GCaMP, Channelrhodopsin-2 (ChR2), Cre	AAV, LV, GdRV	Mouse	ABSL-1 (Note 3)	III-E-1, III-D-1-a	We study the molecular, cellular, and circuit mechanisms underlying sleep regulation. We will use viral-based circuit tracing, neural manipulation, and activity recording to study sleep behavior in mice.	Y1 M9	AC-AABL9550	BQVF3851
18	Peterka, Darcy	Recombinase and/or reporter genes, recombinant proteins that allow for targeted infection; G: rabies virus glycoprotein; gK: Glycoprotein K for H129-dgK; TVA: viral receptor for avian ASLVA; TVB: viral receptor for avian ASLVB; opsin variants; chemogenetic receptors; genetically encoded calcium indicators; DNA recombinases	AAV, HSV, CAV-2, GdRV, pseudotyped LV, YFV-17	Mouse	ABSL-1 (Note 3)	III-E-1, III-D-1-a	We aim to understand the role of forebrain neural circuits in the generation of actions – innate or learned through experience. To investigate the causal relationship of neuroanatomical circuits and specific aspects of motor control, we use imaging, recording, and neuronal manipulation techniques, which are based on transgenic or viral expression of recombinases, reporter proteins, receptors, glycoproteins, optogenetic/chemogenetic or calcium indicator proteins during behavior. Viruses that will be used are: AAV, rabies, CAV2, H129-gK-G4, YFV-17D viruses, Pseudotyped Lentiviruses 1) Rabies SADB19deltaG or N2cdeltaG. Rabies genome vector cSPBN4GFP (GenBank GU299211). Both strains have been modified such that they are not replication competent. 2) Adeno-associated virus (AAV), recombinant and replication incompetent. We will use an engineered AAV, which expresses fluorescent proteins, DNA recombinases, Calcium indicators, opsins, chemogenetic receptors or the TVA/TVB receptors (required for initial infection by rabies virus) and the glycoprotein (required for transsynaptic spread). 3) CAV2 virus: Adenoviridae family, non-enveloped double- stranded DNA virus linear DNA genome. The recombinant CAV2 vectors are based on canine adenoviral CAV2 backbone, which is deleted in the E1 region. CAV2 is a replication-defective vector, except in permissive cell lines such as DKEo cells. 4) YFV-17D virus: anterograde viral system based on a live attenuated vaccine for yellow fever-YFV-17D. Replication- or packaging-deficient mutants of YFV-17D. 5) H129-gK-G4 virus: HSV-1 strain H129 gK-deleted (H129-dgK-G4). The deficiency of gK does not influence viral genome replication, viral protein synthesis, and primary viral assembly, but severely impairs viral egress and transmission [23], which not only hinders virus yield dramatically but also blocks their transmitting/labeling neurons in both anterograde and retrograde ways. Thus, appropriate AAV helpers complementarily expressing gK are required to further assist the monosynaptic transmission of H129-dgK-G4. 6) Lentiviruses. We will use engineered lentiviruses pseudotyped with proteins (including FugB2 or FugC), designed to improve retrograde neuronal transport in the brain and spinal cord. Lentiviruses are necessary for studying specific neuronal circuits to avoid tropism and instable expression from other viral methods. These constructs are engineered to minimize infection of proliferating cells.	Y1 M3	AC-AABG2552	BQSE8753
19	Sadelain, Michel	GFP and luciferase; Tumoral necrosis factor alpha (TNFa); tetracycline inducible promoter	AAV, LV	Mouse	ABSL-1 (Note 2)	III-E-1, III-D-1-a	VSV-G pseudo typed lentiviral vectors (LV) and adeno-associated virus (AAV) will be used to transduce human cells ex-vivo in the lab premises, under a biosafety cabinet. These transduced cells will be later transplanted into mice through IV injections.	Y1 M0	AC-AACI1901	BQVE8813
20	Sadelain, Michel	Mo-MLV gag; RD114 or GaLV env; CAR cDNA	MMLV	In vitro	N/A	III-D-1-a	1)Cell line expansion and production of cell supernatant containing a GMP grade replication-defective gamma retroviral vector 2)Production of gamma retrovirally transduced CAR-T cells 3)Thawing of CAR-T product for infusion	Y1 M0	LS-AAAD5200	BQVF7802
21	Small Saunders, Jennifer	No genes are being expressed. We are using Crispr/Cas9 gene editing to insert a peptide tag on the N or C terminus of genes for localization, western blots and pull down assays. We are also using Crispr/Cas9 gene editing to knockout genes by introducing a knockout cassette that includes a selectable marker in the place of the gene.	Plasmids, CRISPR/Cas9, Plasmodium falciparum (asexual blood stages).	In vitro	N/A	III-D-1-a, III-F	All plasmodium parasites will be grown, edited and handled in biosafety level 2 certified cabinents. Parasites are grown in de-identified human RBC. Cloning plasmids will be performed in E coli cells. The majority of the parasites are established lab lines that are sensitive to artemisinin and chloroquine. We also use the established lab line Dd2, which is mutated in the PfCRT transporter making it resistant to chloroquine but not artemisinin. We use established edited lines that have a point mutation in the kelch like protein 13 that makes the parasite resistant to artemisinin in the ring stages and occasional culture adapted field isolates.	Y1 M0	LS-AAAD5100	BQVF3854
22	Yan, Kelley	Wnt3a, RSPO1, Znrf3	AV	Mouse	ABSL-1 (Note 3)	III-D-1-a	Mice will be injected with replication deficient adenovirus to induce hepatic infection leading to systemic circulation of soluble proteins for the perturbation and manipulation of intestinal stem cells.	Y1 M0	AC-AACJ1951	BQVF3850

Note1: The Biosafety Office allows Stereotaxic injections to be designated as ABSL-1

Note2: The Biosafety Office allows Transduced cell injections that are free from virus to be designated as ABSL-1

Note3: The Biosafety Office allows the administration of replication deficient vectors or attenuated strains to be designated as ABSL-1

Note 4: BSL-2 practices for Fish procedures: store rVSV-infected fish within BSL1 satellite facility, in sealed disposable containers on a designated rack clearly labeled for PI handling only. Following euthanasia, water and containers will be decontaminated with >10% bleach prior to disposal.

Note 5: BSL-2 agent handled with risk mitigation measures