COLUMBIA UNIVERSITY
IN THE CITY OF NEW YORK

INSTITUTIONAL BIOSAFETY COMMITTEE

Minutes
Thursday, May 7th, 2026
Teleconference

Present	Present	Excused
C. Aston	S. Morse (Chair)	L. Butaud-Rebbaa
H. Blumm	T. McConville	B. Karolewski
Y. Collazo	D. Ng	L. Kam
C. Cameron	C. Pitoscia	P. Muranski
K. Crowley	M. Quick	E. Peterson
S. Hughes	V. Racaniello	
S. Joussef Pina	E. Riber (Coordinator)	
J. Kaushal	A. Romanov	
O. Kandas	M. Underwood	
J.J Miranda	Q. Wang	
	Y. Wojcicki	

S. Morse convened the Institutional Biosafety Committee (the **Committee**) at 2:40 PM.

S. Morse asked the Committee to approve the minutes of the April 9th 2026 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.

- **D. Ng acknowledged their individual conflict of interest and abstained from voting on their respective protocols.**

DURC Review

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

Human Gene Therapy

- Horowitz_IRB-ACYY1418_APM-ACYY0504: A Phase 1b/2a, Open-Label, Dose-Exploration Basket Study to Investigate the Safety and Tolerability of Subretinally Injected OPGx-BEST1 Administered in Patients with Either Autosomal-Dominant BEST1 Disease (Best Vitelliform Macular Dystrophy [BVMD]) or Autosomal-Recessive Bestrophinopathy (ARB).
    - S. Joussef Pina introduced Dr. Horowitz's human use protocol for pediatric patients with either Autosomal-Dominant BEST1 Disease (BVMD) or (ARB). Details of the study regarding the preparation of the agent, dosage, route of administration, inclusion criteria, quality assurance testing, and informed consent were included in relevant materials distributed to the Committee.
    - No concerns were identified by the Committee Human Gene Transfer Experts.
    - The Appendix M was voted upon and approved unanimously.

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

Eight 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.

- Six 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.

Fourteen 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.

- Seven 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

- There were no new announcements

Report

- There were no new reports.

rDNA Incidents

- There were no incidents reported.

Action Items

Action Items from 05-07-26 IBC meeting		
Status	**Description**	**Group/Investigator**
N/A	**N/A**	**N/A**

With there being no further business S. Morse adjourned the meeting at 2:56 PM. The next meeting will be held by teleconference on June 4th, 2026.

2026 Meeting Calendar

Date
Thursday, January 15, 2026
Thursday, February 12, 2026
Thursday, March 12, 2026
Thursday, April 9, 2026
Thursday, May 7, 2026
Thursday, June 4, 2026
Thursday, July 9, 2026
Thursday, August 6, 2026
Thursday, September 10, 2026
Thursday, October 8, 2026
Thursday, November 5, 2026
Thursday, December 3, 2026

IBC Meeting: May 07, 2026

Table 1: Recombinant DNA proposals

Proposals for Work at BSL-1

	PI	Insert	Vector	Host	Animal Biosafety Level	NIH category	Use/Comments	Year
1	Al Dalahmah, Osama	CAS9, guide-RNAs including for Spp1, Ptn, and Enho	AAV	Mouse	ABSL-1	III-E-1	One goal of the project is to modify the expression of certain genes selectively in cells of the brain microenvironment, especially astrocytes, to block the progression of glioblastoma. The method used to modify gene expression in brain microenvironment is delivery of CRISPR-CAS9 along with guide-RNA (gRNA) into the cells by adeno-associated virus (AAV) transduction. Co-delivery of guideRNA (gRNA) targeting genes involved in glioblastoma invasion and progression will specifically knockout genes selectively in cells of the brain microenvironment - these genes include Ptn, Spp1, and Enho. AAV particles are not pathogenic in humans. These viruses cannot replicate on their own and do not need to be inactivated.	Y1M1
2	Bendesky, Andres	GRAB-NE2m, GFP, mCherry	AAV	Mouse	ABSL-1	III-E-1	Stereotaxic injection of adeno-associated viral vectors (AAV) encoding the genetically encoded norepinephrine indicator GRAB-NE2m will be performed to express the sensor in brain endothelial cells of Tie2Cre transgenic mice for fiber photometry recording. AAV will also be injected into the adrenal glands for select experiments. Stereotaxic equipment will be sterilized before and after use. No more than 10 ul of viral suspension will be open in the room at any one time. The virus will be injected using a borosilicate glass capillary, which will be bleached immediately following the procedure.	Y1M0
3	Dumitriu, Dani	hM4D(Gi), hM4D(Gq), GFP, EGFP-Cre, GCAMP. All genes are in the construct with AAV.	AV	Mouse	ABSL-1	III-E-1	We are interested in the neural circuitry underpinning resilience versus susceptibility and we are interested in the role of different brain regions and connectivity patterns that contribute to these phenotypes. More specifically we are focused on brain activity following different early life activity that requires the identification of different activity patterns. The use of different viral strategies allows us to identify region and specific cells activated in the following selected experiences behavioral test and also manipulate specific connections (i.e. TRAP Cre and DIO-DREADD).	Y1M0
4	Polleux, Franck	fluorescent proteins and cre recombinase	Plasmid	Mouse	ABSL-1	III-E-1	Transfect DNA plasmids into mouse cortical or hippocampal neurons using in utero electroporation in order to express genes of interest (such fluorescent proteins, Cre and Flp recombinases, or genes (cDNAs) studies by the lab).	Y1M0
5	Sands, Tristan	miRNA shuttle vector with antisense sequence to Grin2d; eGFP; Scn2a; Kcnq3; Iqsec2	AAV	Mouse	ABSL-1	III-E-1	Epileptic encephalopathies are severe pediatric disorders with limited if any treatment options. Drugs are widely used in human but gene therapy via viral delivery is increasingly effective. Options now available include gene replacement, RNAi, CRISPR regulation, modulation of translation via long noncoding RNA and others. Once optimized, constructs are placed into a suitable vector, packaged into replication defective AAV9 with suitable tropism in brain and delivered to animals for phenotypic testing.	Y1M4
6	Tsang, Stephen	Best1, mfrp	AAV	Mouse	ABSL-1	III-E-1	We hypothesize that recessive forms of retinal degeneration can be treated using a gene therapy CRISPR approach to deliver a good copy of the gene and restore vision in mice.	Y1M4
7	Wang, Harris	Cre recombinase, tTA	AAV	Mouse	ABSL-1	III-E-1	Ourselves and/or our collaborator will use standard protocols to generate adenoassociated virus in the laboratory to carry gene expressions cassettes encoding Cre recombinase and tTA trans-activator. These vectors are grown in 293T cells using transient transfection of commonly used plasmids available widely to the research community. The vectors are then purified using standard molecular biology practices and stored in -80C until use. The vectors we generate in lab will encode genes (Cre recombinase, tTA) which do not cause overt harm unless expressed at very high levels and whose recognition/binding sequences are not present in mammalian genomes (aside from cryptic LoxP sites which are recognized at low affinity by Cre recombinase); furthermore, these vectors do not cause overt harm to animals or cells as well.	Y1M0

	Proposals for work at BSL-2							
	PI	**Insert**	**Vector**	**Host**	**Animal Biosafety Level**	**NIH category**	**Use/Comments**	**Year**
8	Bhattacharya, Jahar	cDNA E-cadherin, Connexin 43 wild type and mutant, Focal Adhesion kinase mutant (del-FAK), GFP-tagged TNF, mito-roGFP, MCU- full length and mutant, Rac1, Y12F-GFP, alpha actinin-GFP, Lifeact, Drp1, Perceval, LIBRA plasmids, Cofilin, Rac1, -actinin, cytosolic, mitochondrial and the ER-targeted Ca2+- sensors, Siglec-F, UCP-2 and pro IL-1 plasmids.	AVV, AV, LV, PR8, Bacteria (E. coli and S. aureus, USA300), Pseudomonas aeruginosa (strain O1 and K)	Mouse	ABSL-2	III-E-1, III-D-1-a, III-F	To understand the specific genes regulating basic mechanisms of acute lung injury, in live animals, we used plasmid and viral vector based gene transduction and knockdown strategies. Following gene expression or knockdown, we carry out imaging studies in intact alveoli or microvessels of live lungs excised from mice.	Y2M0
9	Canoll, Peter	Genes that we overexpress or downregulate in human iPSC-derived neural cells include: SPP1, NGFR, LINGO, RbFOX1, CD44, MAGEH1, SOX10, GFP, mCherry, ACSL4	LV	Mouse	ABSL-1 (Note 2)	III-D-1-a	We use commercially available, attenuated lentiviral particles from companies including VectorBuilder and Sigma to overexpress or downregulate (shRNA) genes in neural cells for mechanistic studies. These genes include but are not limited to SPP1, NGFR, LINGO, RbFOX1, CD44, GFP, mCherry, and ACSL4. Lentiviral particles are added to the cell culture medium for 24 hours, followed by collection of the medium supernatant, thorough washing with PBS/medium three times and subsequent inactivation of the virus with 10% bleach (both supernatant and washing solution). We use some of these lines for cell injection into mouse brains. In addition, we use an IMR90 induced pluripotent stem cell (iPSC) line, which has been genetically modified via CRIPSR/CAS9 technology to introcuce the APPV717I mutation, resulting in APPV717I iPSC lines, which we use for mechaniastic studies in vitro and for cell injection into the brains of mice. These cell lines have been generated by the Sproul lab at CUIMC.	Y1M2
10	Gaudet, Ryan	Green fluorescent protein and/or variants. Ampicillin resistance. sgRNA cassettes. Cas9 protein. Cas12 protein. Puromycin resistance.	LV, Herpes Simplex Virus, Zika virus, Dengue virus, Kaposi sarcoma-associated herpesviurs, Respiratory syncytial virus, Sinbus Virus, Trypanosoma cruzi Salmonella typhimurium, Listeria monocytogenes, Chlamydia pneumoniae, Streptococcus pyogenes, Shigella flexneri, Burkholderia thailandensis, Rickettsia parkeri, vaccinia	In vitro	N/A	III-F, III-D-1-a	The goal of this program is to identify the key host proteins that confer cellular protection against important human pathogens. We employ a set of invasive bacterial, parasitic, and viral pathogens that replicate using fundamentally distinct intracellular lifestyles as tools with which to define the host defense factors that safeguard human cells from these pathogens. We are particularly interested in mechanisms that are induced by immune cytokines (e.g interferons), and those that may be tailored to the subcellular niche exploited by the microbe.	Y1M0
11	Gu, Wei	p53	LV	Mouse	ABSL-1 (Note 2)	III-D-1-a	The goal of the use of rDNA is to express p53 in cultured cells either by plasmid DNA which is not infectious or by lentivirus which consists of a replication incompetent viral vector and other components to to express p53 protein	T1M01
13	Konofagou, Elisa	luciferase	LV transduced cell lines	Mouse	ABSL-1	III-E-1	Human cell lines will be used for orthotopic cancer mouse models. Intravenous E. coli will be used to enhance HIFU and ultrasound imaging efficiency and efficacy	Y2M0
14	Mamonkin, Maksim	Chimeric antigen receptors, chimeric cytokine receptors, other normal and chimeric human and mouse receptors, cytokines, marker genes (NGFR, CD19, CD34, CD20), luciferase (Firefly, beetle, Aka), Amp/Kan resistance genes (bacterial plasmids), LTR elements	LV, MMLV	Mouse	ABSL-1 (Note 2)	III-D-1-a	We will be creating chimeric DNA constructs based on natural (mammalian genes, luciferase) and artificial (eg. protein binders) sequences and expressing them in mammalian cells, including primary human T cells and cell lines. Replication-incompetent retroviral vectors (similar to those used in FDA-approved clinical products, listed below), or Class II transposons will be used for genetic transduction. Other methods include gene- and base-editing (eg CRISPR-Cas9 mediated) in mammalian cells where reagents will be delivered via electroporation or liposomal transfection. Majority of work will be done with replication-incompetent RD114- and GALV-pseudotyped MoMLV-based vectors as well as MSCV-based vectors with eco- and amphotropic packaging. VSV-G pseudotyped lentiviral vectors will be used in some instances	Y1M0
15	Peterka, Darcy	Recombinase and/or reporter genes, recombinant proteins that allow for targeted infection, opsin variants, chemogenetic receptors, genetically encoded cell activity indicators.	AAV, AV, PRV, LV, GdRV	Mouse	ABSL-1 (Note 3)	III-E-1, III-D-1-a	This work will reveal the neural input to peripheral organs and their functions. This will be achieved by using a combination of transgenic mouse lines and virus tools to deliver genes which may be recombinases, reporter proteins, receptors or glycoproteins. Small amounts of virus are delivered by intrarectal, intrasplenic, intrapancreatic, intrabone, intrarenal, intraspinal or intraganglionic stereotaxic injection.	Y1M5
16	Reilly, Muredach	human low density lipoprotein receptor (LDLR)	AAV, AV	Mouse	ABSL-1 (Note 3)	III-E-1, III-D-1-a	Our overall goal for this project is to clarify the function and mechanism of a novel smooth muscle cell (SMC)-derived cell type in the development, progression and regression of atherosclerosis. We will use mouse models that mimic atherosclerosis in humans, as well as SMC lineage tracing mouse models to determine the roles of the novel cell type in the progression and regression of the disease. We will apply a mouse atherosclerosis regression model by restoring hepatic LDLR expression in 16-week high-fat diet fed mice through single tail intravenous (i.v.) injection of helper-dependent adenovirus containing human LDLR gene (HDAd-hLDLR adenovirus, 200 ul, 2x10E11 viral particles/mouse) or intraperitoneal (i.p.) injection of adeno-associated virus containing human LDLR gene (AAV8-TBG-hLdlr, also both 200 ul, 2x10E11 viral particles/mouse) and simultaneously switching to chow diet for 5 weeks. For both, viral tropism is mouse (not human) and the viruses are replication incompetent.	Y1M0

17	Schwabe, Robert	R-Spondin 3 (Rspo3) and CTNNB1-S45Y (activated beta catenin)	AAV, E.coli CHS7-STAMP or Samonella typhimurium	Mouse	ABSL-2	III-E-1, III-F	AAV8-TBG-empty, AAV8-TBG-Rspo3 or AAV8-TBG-CTNNB1-Y45 will be used tto overexpress Rspo3 or Ctnnb1 in hepatocytes in vivo. E.coli strain CHS7-STAMP will be used to induce liver abcesses	Y1M2
18	Sims, Peter	DNA barcoded GFP	LV	In vitro	N/A	III-D-1-a	The goal of this project is to identify drug resistant clones in a patient-derived glioblastoma cell line. The work involves transducing a cell line with a lentiviral library of DNA barcodes that can be read out by sequencing after drug treatment. The lentivirus is replication incompetent VSV-G pseudotyped.	Y1M0
19	Sternberg, Samuel	Various nuclease and transposase genes, including TnpA, TnpB, TnsA, TnsB, TnsC, or guide RNAs, and/or combinations thereof	LV	In vitro	N/A	III-D-1-a	We will be generating lentiviral vectors using standard approaches, with the goal of producing stable knock-in human cell lines via transduction and lentivirusbased gene integration. Lentiviral vectors will be generated by co-transfecting packaging cells derived from mammalian cell lines, with a plasmid vector containing a portion of the lentiviral genome and additional packaging plasmids. The packaging plasmids encode essential viral proteins (such as Gag, Pol, and Rev) required for the assembly and packaging of the viral particles. Transfected packaging cells then produce lentiviral particles, which are released into the cell culture supernatant. The lentiviral particles contain the lentiviral vector carrying the desired genetic material. These particles will be harvested and purified from the supernatant using various techniques, such as ultracentrifugation or filtration, to concentrate and purify the lentivirus. Lentiviral particles will then be used to transduce target cells	Y1M0
20	Worley, Jeremy	SpCas9, SaCas9, nCas9, dCas9, AsCas12a, LbCas12a, enAsCas12a, CasRx (RfxCas13d), LwaCas13a, PspCas13b, dCas9-KRAB, dCas9-VPR, dCas9-VP64, dCas9-SAM (MS2-p65-HSF1), dCas9-SunTag, dCas9-KRABMeCP2, CRISPRoff, CBE, ABE, PE2, EGFP, GFP, mCherry, RFP, BFP, tdTomato, PuromycinR, BlasticidinR, NeomycinR, HygromycinR	LV	In vitro	N/A	III-D-1-a	The goal of this project is to produce lentiviral libraries for pooled CRISPR screens. Our lab performs pooled functional genomics assays—knockdown, knockout, or activation of genes alone or in combination—using lentiviral libraries that transduce the Cas protein and guide RNA separately or together. Lentivirus is widely used for this purpose because it allows titer control, supports integration, and accommodates large vectors incompatible with AAV. Generally, each cell receives a single infection and integration. HEK293T producer cells generate virus using standard second- and third-generation lentiviral packaging systems. Cell culture is performed in my labs in Lasker Building 206 and 330A, each equipped with multiple biosafety cabinets and incubators. Both rooms contain 70% ethanol for decontamination and bleach for liquid waste disinfection prior to disposal. We primarily use standard VSV-G pseudotyped vectors, but are also testing KORV and BAEV envelope proteins for use in NK cell	Y1M0
21	Wu, Xuebing	MYC, CRISPR-Cas9	LV	In vitro	N/A	III-D-1-a	Goals: Establish CRISPR-Cas9 stable cell lines and generate sgRNA libraries for functional genomic research. Methodology: 3rd generation lentiviral vectors are utilized to transduce target cells. All manipulations involving infectious material are conducted within Class II Biosafety Cabinets. Inactivation: Contaminated consumables are submerged in 10% bleach for a minimum of 1 hour. Work surfaces are decontaminated using UV irradiation following each experimental session. Safety Provisions: The 3rd generation system is replication-incompetent due to a split-genome design. Personnel use PPE, including lab coats, masks, double gloves, goggles, and protective sleeves. Additional Risks: VSV-G pseudotyping grants the virus a broad tropism, enabling the infection of a wide range of human cell types. CRISPR-Cas9 poses risks of off-target genomic modifications; accidental self-inoculation could theoretically result in the disruption of tumor suppressor genes or oncogenic transformation.	Y1M0
22	Yousefzadeh, Matthew	telomerase, SV40 Large T Antigen	LV	Mouse	ABSL-1 (Note 2)	III-D-1-a	Use of senotherapeutics and other geroprotective compounds and transplantation of immune cells to modulate aging phenotypes inmate to extend healthspan and lifespan. All hazardous material work will be performed by Matt Yousefzadeh.	Y1M0

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 deco

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