THE ROCKEFELLER UNIVERSITY INSTITUTIONAL BIOSAFETY COMMITTEE
October 27, 2025
By zoom

Attendees: Leslie Diaz, Gaitree McNab, Charles Rice, Jeremy Rock, Eric Schine, Agata Smogorzewska, Amy Wilkerson

Approval of minutes: The minutes of the April 23, 2025, meeting were approved.

Follow Up Actions from Last Meetings: The Chair reported the following:

- Past due training confirmed completed.
- 2023-04-006 Jarvis: The Chair informed the PI that all work with rabies virus must be conducted at BSL2/ABL2 and the PI acknowledged.
- 2025-07-004 R. Darnell: The PI revised the personnel list and certified that it was complete.
- 2025-07-008 Brady: The PI confirmed that the described *in vivo* work does not fall under NIH Guidelines.
- 2025-07-006 Nurse: The PI confirmed that the personnel listed on the registration conduct research at the University.

Conflict of Interest Statement: Members stated that they had no conflict with items of business in front of the Committee.

Annual Reports (see summary below): All reports were timely received. The Chair will follow up with the two HOLs (Cao and O'Donnell) regarding the past due training. There were no questions about the annual reports.

Amendments:
2022-10-003 Sohail Tavazoie: The amendment request to add *in vivo* use of herpes simplex virus (strain H129 ΔTK-TT) was granted administrative approval on July 29, 2025.
2024-04-003 Charles Rice: The amendment requests to add personnel to the Registration were granted administrative approval on August 5 and October 2, 2025

Exempt Renewals: The Committee was informed that the following renewal, which involves only work exempted from full Committee review, was approved on October 22, 2025.

- 2025-10-005 Shixin Liu PI Based Registration (renewal of 2022-10-004)

New/Renewed Non-Exempt Registrations:
2025-10-001 Sebastian Klinge PI Based Registration (renewal of 2022-10-001): There are no significant proposed changes to the currently approved covered research activities in the Klinge Laboratory. The Laboratory has updated its personnel list. Dr. Klinge's Laboratory studies the structure of protein complexes and utilizes recombinant DNA to produce recombinant proteins and generate modified yeast strains and human cell lines. Standard recombinant DNA techniques are employed for *in vitro* transcription of pre-ribosomal RNA and for the expression of genes from plasmids in bacteria, yeast, or human cells to produce proteins. The Committee discussed that some of the recombinant work is conducted in large volumes covered under Section III-D-6 of the Guidelines. Other work involves the use of synthetic DNA, produced through gene synthesis or assembled from oligonucleotides, to genetically modify yeast or human cells. Established protocols utilizing homologous recombination allow insertion of recombinant DNA into specific genomic loci. These experiments are exempt under Section III-F-1 the Guidelines. The Committee agreed that the work involving yeast and bacteria may be conducted at BSL1 and work involving human cells must be conducted at BSL2. The Committee approved the registration.

2025-10-002 Winrich Freiwald PI Based Registration (renewal of 2022-10-002): There are no proposed changes to the currently approved covered research activities in the Freiwald Laboratory. The Laboratory

updated its inventory, personnel, and room lists to reflect minor changes. The aim of the Freiwald Laboratory is to understand the neural mechanisms of intelligence, from perception to action, and the processes in between, including memory, emotion, and cognition. The Laboratory focuses on understanding how neural circuits give rise to complex behaviors and cognitive functions, such as the recognition of social stimuli like faces, the integration of memory and emotion, and the mechanisms underlying attention and decision-making. To address these questions, the Laboratory employs viral vector-based genetic methods to label, manipulate, and record from specific neuronal populations. These include the use of optogenetic and calcium imaging tools to activate or monitor neural activity in real time. Mice are used for technology development and optimization, while non-human primates serve as the primary model organisms for functional studies. The viral vectors used for gene delivery remain AAV, including newer serotypes such as AAV-PHP.b, and lentivirus**.** The Committee discussed that the work is covered under Sections III-D-4-b and III-E-1. They noted that all work with non-human primates must be conducted at ABSL2. The experiments with AAV and lentiviral vectors in mice must be done at ABSL2 and the animals housed at ABSL2 for 72 hours post injection, after which they can be transferred to ABSL1. The Committee approved the registration.

2025-10-003 Sohail Tavazoie PI Based Registration (renewal of 2022-10-003) There are no significant changes to the currently approved covered research activities in the Tavazoie Laboratory. The Laboratory has updated its inventory, personnel roster, and locations, as well as Tables 1, 3, and 5, to reflect ongoing work and newly established animal models. The Tavazoie Laboratory continues its primary research focus on identifying and characterizing small non-coding RNAs, including microRNAs, tRNAs, and tRNA-derived fragments, and genes that mediate metastasis of various primary tumors to secondary organs such as the bone, lung, liver, and brain. The Laboratory also investigates genes and non-coding RNAs that regulate the invasion and dissemination of glioblastoma within the brain. To achieve these objectives, the Laboratory employs molecular, genetic, imaging, and animal model approaches. Mouse model systems are used to evaluate the metastatic potential of human cancer cell lines derived from breast (MDA-MB-231), colon (SW480, SW620, WiDr), and melanoma (A375, WM239A) cancers. In some experiments, tumor cells are engineered to express a thymidine kinase-GFP-luciferase fusion transgene to permit non-invasive monitoring of tumor growth and dissemination by bioluminescent imaging. The Laboratory's experimental design utilizes a combination of approaches, employing short hairpin RNA (shRNA) interference, CRISPR-Cas9–based gene editing, and viral vector delivery systems. These include replication-incompetent lentiviral and retroviral vectors, produced using third-generation packaging systems (VSV-G pseudotyping), Adeno-associated viral (AAV) vectors generated by helper-free systems in 293T cells, and plasmid-based shuttle and expression vectors for gene cloning and protein expression studies. The Laboratory also generates and maintains transgenic and knockout mouse lines for *in vivo* studies, including newly added strains such as hPCSK9 knock-in and variant lines, Rag1 KO/hPCSK9 models, and ROBO-flx mice, which replace several legacy tumor models used in prior registrations. The Committee discussed that the described work is covered under Sections III-D-1, III-D-3 III-D-4-b, Section III-E-1, III-F-1, III-F-2, III-F-3, III-F-4, III-F-8, and C-VII and C-VIII. The Committee agreed that the work must be conducted at BSL2/ABSL2 containment, with AAV and lentiviral vector work involving animals performed at ABSL2, but that the animals may be housed at ABSL1 starting 72 hours post-injection. The Committee approved the registration.

2025-10-004 Nathaniel Heintz PI Based Registration (renewal of 2022-10-005): There are no significant changes to the currently approved covered research activities in the Heintz Laboratory. The Laboratory has updated its inventory, personnel list, and locations, as well as Tables 1, 3, 4, and 6, to reflect current practices and newly added experimental constructs and personnel. The Heintz Laboratory continues its primary research focus on identifying and characterizing the molecular and genetic mechanisms that define the identity, connectivity, and function of distinct neuronal populations within the mammalian brain. The Laboratory's research aims to explain how specific neuronal circuits contribute to neurological and neuropsychiatric conditions such as Huntington's disease, Alzheimer's disease, amyotrophic lateral sclerosis (ALS), depression, and addiction. To accomplish these goals, the Laboratory employs bacterial artificial chromosome (BAC) transgenesis and viral-mediated gene expression systems to mark, trace, and

manipulate targeted neuronal subtypes. Using transgenic mice and stereotaxic viral delivery, researchers introduce reporter, recombinase, or optogenetic constructs into discrete brain regions in mice to map neural circuits and assess neuronal activity. The Laboratory's experimental approach incorporates strategies utilizing BAC-based shuttle vectors, AAV and lentiviral vectors, and branched-DNA technologies such as RNAscope and PrimeFlow assays for spatial RNA detection. Replication-incompetent lentiviruses are packaged under BSL2 containment within the main lab area, and adeno-associated viral vectors are produced either on-site or by third-party facilities. Plasmid selection employs standard antibiotic resistance markers (ampicillin, kanamycin, tetracycline, chloramphenicol) in non-pathogenic *E. coli* strains (TOP10, DH10B), consistent with Section III-F of the NIH Guidelines and exempt from Section A-1 and additional NIH or IBC review. These antibiotic markers are used solely for plasmid maintenance and propagation and do not involve the deliberate transfer of drug resistance traits to pathogenic organisms. *In vivo* work is performed using transgenic and viral-vector–injected mice, housed and handled under BSL1 or ABSL2 containment as appropriate. Newly described transgenic lines in Table 3 include Colgalt2-TRAP, Gng7-Cre, Gpr151-Cre, and Gprin3-TRAP BAC mouse models, each expressing ribosomal or recombinase proteins under cell-type specific promoters. The Laboratory also maintains and utilizes multiple viral vector systems including established human and mouse cell lines for *in vitro* studies. All vectors are replication-incompetent or defective and used under BSL2 containment. The Committee discussed that the work is covered under Sections III-D-1, III-D-3, III-D-4, III-E-1, III-F-1, III-F-2, III-F-3, III-F-4, III-F-5, III-F-8, and C-VII and C-VIII. Tissue culture experiments with 293T cells, HSV, AAV and lentiviral vectors must be conducted at BSL2. *In vivo* work with HSV and 293T cells must be done at ABSL2. AAV and lentiviral vector injections in animals are to be performed under ABSL2 containment, with animals housed for at least 72 hours post-injection before transfer to ABSL1 housing. The Committee approved the registration.

Summary of Annual Reports Due

Protocol #	PI	Change in			Comments
		Materials	Methods	Personnel	
2023-10-001	Jun Cao			X	Personnel past due for training
2023-10-002	Steve Bonilla			X	
2024-10-001	Tom Walz			X	
2024-10-002	Mike Young				No changes
2024-10-003	Barry Coller			X	
2024-10-004	Daniel Kronauer			X	
2024-10-005	Mike O'Donnell			X	Personnel past due for training
2024-10-006	Gaby Maimon			X	
2024-10-007	Viviana Risca	X	X	X	Additional chromatin and CRISPR methods; Development of an overexpression system for the histone MacroH2A in RPE-1 retinal pigment epithelium cells using adding viral, bacterial and mammalian expression plasmids
2024-10-008	Fred Cross			X	