Caltech

California Institute of Technology
Administrative Committee on Biosafety
Minutes of the Institutional Biosafety Committee (IBC)

Date: March 3, 2026 **Time: 2:35 PM** **Location: Zoom Videoconference**

Voting Members:	R. Ismagilov, M. Doshi, L. Cai, W. Gao, L. Quenee, N. Siladke, S. Chatterjee, A. Grossman, M. Barsever, K. Lencioni, C. Cortese, E. Hisserich, F. Chen, M. Coleman
Nonvoting:	3 attendees
Guests:	2 attendees
Other:	1 attendee

Called to order at 2:35 pm, with a quorum in attendance.

1. Announcements
2. Old Business
   A. Protocols - Approved Pending Modifications, Modifications Complete

   The following protocol was previously approved pending implementation of additional IBC-required modifications at the December 11 meeting. The modifications have been completed/implemented and the protocol is approved:

Protocol:	26-279	De Novo	Expiration Date:	2/10/2026
Title:	Developing Biosensors to Study Drug Addiction in the Brain			
PI Name:	Lester			
Modifications Completion: 2/9/2026				
Note: Rather than completing modifications required to continue BSL-2 work, the PI requested that the relevant materials be removed from the protocol.				

3. New Business
   A. Approval of Minutes: February 3, 2026

   The February 3 meeting minutes were approved by a majority of the IBC. There were 2 abstentions from members who were not present at the February 3 meeting.

   B. Protocols – Full Committee Review

Protocol:	26-110	De Novo	Expiration Date:	5/12/2026
Title:	Expressing opsins and fiberoptic stimulation/electrophysiological recordings using small mammals/vertebrate animals			

PI Name:	Shapiro
Brief Description of Project: Overall, this work is intended to establish foundational methods for studying neural circuits across species and to inform future research on how brain networks support perception and behavior. The study will assess whether these approaches are effective in animals to improve understanding of how feedback pathways contribute to brain processing. The project focuses on sensory and motor systems, examining how activating or suppressing selected neuronal populations influences neural activity patterns and circuit function. An additional goal is to evaluate whether these approaches can also support mapping of neural connections in living animals.	
Biological Materials Review Summary: We will use replication-incompetent viral vectors (AAV, lentivirus, HSV-1 amplicon, and G-deleted rabies), diphtheria toxin, human cell lines, and animal models.	
NIH Guidelines: III-D	Highest BSL Level: BSL2 w/BSL3 practices
Training: This protocol requires the following biosafety training: Comprehensive Biosafety (BSL2), annual Bloodborne Pathogens, Viral Vector, and Biological Toxin Training. Personnel who have not completed the required training will not begin this work until all appropriate training has been completed and documented.	
Review Summary: All facilities, procedures, and practices have been reviewed by the IBC and are considered appropriate and acceptable.	
IBC Action/Decision: Approved	
❖ The committee reviewed and unanimously approved this protocol subject to adherence to the standard stipulations.	

Protocol:	26-361 De Novo	Expiration Date:	5/12/2026
Title:	Untangling complex microbial interactions in environmental ecosystems		
PI Name:	Karthikeyan		
Brief Description of Project: We are conducting multi-omic analyses of complex microbial samples including wastewater and soil.			
Biological Materials Review Summary: Material includes California wastewater and soil.			
NIH Guidelines: N/A		Highest BSL Level:	BSL2
Training: This protocol requires the following biosafety training: Comprehensive Biosafety (BSL2), and annual Bloodborne Pathogens, and Aerosol Transmissible Disease Training. Personnel who have not completed the required training will not begin this work until all appropriate training has been completed and documented.			
Review Summary: All facilities, procedures, and practices have been reviewed by the IBC and are considered appropriate and acceptable.			
IBC Action/Decision: Pending Modifications - Subcommittee			

❖ The committee reviewed and unanimously deferred approval of this protocol pending implementation of the following modifications and subsequent review and approval by a subcommittee:

- Update the Research Description to include descriptions of the following:
  - Material collection, including the overall process and PPE worn during collection
  - Packaging and transporting samples to the laboratory
  - Procedures for sample processing and method of extraction/lysis
- Clarify whether shipment of biological materials will occur.

Protocol:	23-214-A2	Amendment	Expiration Date:	6/12/2026
Title:	Understanding the neural basis of motivated behavior for homeostatic regulation			
PI Name:	Oka			
Brief Description of Project: This project investigates the biological mechanisms underlying neuro-renal interactions to inflammation] using standard laboratory techniques. The goal is to advance our understanding of the fundamental neuro-renal interactions that may inform future research and potential clinical applications for kidney-related disorders.				
Biological Materials Review Summary: This protocol utilizes standard biological materials, such as rodent tissue samples and a wildtype bacterial strain, to examine neural regulatory mechanisms associated with renal function. All biological materials are handled in accordance with institutional biosafety guidelines and applicable regulatory standards.				
NIH Guidelines:	III-D	Highest BSL Level:		BSL2 w/ BSL3 Practices
Training: This protocol amendment requires the following biosafety training: Comprehensive Biosafety (BSL2) Training. Personnel who have not completed the required training will not begin this work until all appropriate training has been completed and documented.				
Review Summary: All facilities, procedures, and practices have been reviewed by the IBC and are considered appropriate and acceptable.				
IBC Action/Decision:	Pending Modifications - Subcommittee			

- ❖ The committee reviewed and unanimously deferred approval of this protocol pending implementation of the following modifications and subsequent review and approval by a subcommittee:
  - Clarification of procedures performed in the BSC

Protocol:	24-384-A2	Amendment	Expiration Date:	12/12/2027
Title:	Gene regulation and genome stability			
PI Name:	Fianu			
Brief Description of Project: Our understanding of how genes are regulated in human cells is incomplete. To address this, we aim to generate stable cell lines and employ targeted gene silencing and genome editing techniques to manipulate the expression of genes of interest. This is a core component of our ongoing projects, which seek to elucidate the fundamental principles of gene control.				
Biological Materials Review Summary: We will utilize replication-incompetent lentiviral vectors to generate stable cell lines and employ the CRISPR-Cas9 system for targeted gene silencing and genome editing. These strategies will enable us to express genes of interest in standard human cell lines, such as HEK293. All work will be conducted under BSL-2 with BSL-3 conditions.				
NIH Guidelines:	III-D	Highest BSL Level:		BSL2 w/ BSL3 practices
Training: This protocol amendment requires the following biosafety training: Comprehensive Biosafety (BSL2), annual Bloodborne Pathogens, and Viral Vector Training. Personnel who have not completed the required training will not begin this work until all appropriate training has been completed and documented.				
Review Summary: All facilities, procedures, and practices have been reviewed by the IBC and are considered appropriate and acceptable.				
IBC Action/Decision:	Pending Modifications - Subcommittee			

❖ The committee reviewed and unanimously deferred approval of this protocol pending implementation of the following modifications and subsequent review and approval by a subcommittee: • Clarification of transgenes expressed in the lentiviral vector

C. Protocols - Expedited Review

Protocol:	23-323-A2	Amendment	Expiration Date:	7/12/2026
Title:	Cell cycle progression, centriole and cilia formation and organelle trafficking in Drosophila and mammalian cells			
PI Name:	Glover			
Brief Description of Project: This amendment involves the addition of human cell lines derived from primary human cells that will be handled in the same manner as previously described and approved for human cells.				
Biological Materials Review Summary: This amendment includes the addition of human cell lines derived from primary human melanocytes and fibroblasts.				
NIH Guidelines:	III-D	Highest BSL Level:		BSL2 w/ BSL3 practices
Training: This protocol amendment requires the following biosafety training: Comprehensive Biosafety (BSL2) and annual Bloodborne Pathogens Training. Personnel who have not completed the required training will not begin this work until all appropriate training has been completed and documented.				
Review Summary: All facilities, procedures, and practices have been reviewed by the IBC and are considered appropriate and acceptable.				
IBC Action/Decision:	Chair Approved			
❖ The Chair reviewed and approved the protocol subject to the adherence to the standard stipulations.				

Protocol:	23-369-A14	Amendment	Expiration Date:	10/12/2026
Title:	Detection and characterization of bacteria in human samples and cultures.			
PI Name:	Ismagilov			
COI/Recusal: R. Ismagilov was recused from the discussion of this protocol.				
Brief Description of Project: This amendment is to add skin swabs from healthy donors to be used in a similar manner as previously described for human samples. Samples will be processed to extract nucleic acids that will be used for downstream nucleic acid detection and characterization.				
Biological Materials Review Summary: This amendment involves the addition of skin swabs from healthy human donors in accordance with IBC-approved and IRB-approved procedures.				
NIH Guidelines:	N/A	Highest BSL Level:		BSL2 w/ BSL3 practices
Training: This protocol amendment requires the following biosafety training: Comprehensive Biosafety (BSL2) and annual Bloodborne Pathogens Training. Personnel who have not completed the required training will not begin this work until all appropriate training has been completed and documented.				
Review Summary: All facilities, procedures, and practices have been reviewed by the IBC and are considered appropriate and acceptable.				
IBC Action/Decision:	Vice Chair Approved			

❖ The Vice Chair reviewed and approved the protocol subject to the adherence to the standard stipulations.

Protocol:	23-287-A1	Amendment		Expiration Date:	6/10/2026
Title:	Protein Biosynthesis and quality control				
PI Name:	Voorhees				
Brief Description of Project: This project is to understand the molecular mechanism for how proteins are made and assembled, and the quality control pathways that recognize protein and RNA products that fail during this process. This amendment is to revise the list of transgenes for expression in viral vector systems to investigate proteins involved in heritable retinal blindness.					
Biological Materials Review Summary: This amendment includes an update to the transgene list for use in the lentiviral vector system.					
NIH Guidelines:	III-D		Highest BSL Level:		BSL2 w/BSL3 practices
Training: This protocol amendment requires the following biosafety training: Comprehensive Biosafety (BSL2), annual Bloodborne Pathogens, and Viral Vector Training. Personnel who have not completed the required training will not begin this work until all appropriate training has been completed and documented.					
Review Summary: All facilities, procedures, and practices have been reviewed by the IBC and are considered appropriate and acceptable.					
IBC Action/Decision:	BSO Approved				
❖ The BSO reviewed and approved the protocol subject to the adherence to the standard stipulations.					

Protocol:	24-234-A4	Amendment		Expiration Date:	9/12/2027
Title:	Analyzing and designing genetic circuits in animal cells and tissues				
PI Name:	Elowitz				
Brief Description of Project: This amendment involves additional human cell lines to be handled in the same manner as previously described and approved.					
Biological Materials Review Summary: This amendment involves additional human cell lines: 143B (osteosarcoma) and AsPC1 (cell line derived from nude mouse xenografts initiated with cells from a patient with pancreatic cancer). Both will be obtained from ATCC.					
NIH Guidelines:	III-D		Highest BSL Level:		BSL2 w/BSL3 practices
Training: This protocol amendment requires the following biosafety training: Comprehensive Biosafety (BSL2) and annual Bloodborne Pathogens Training. Personnel who have not completed the required training will not begin this work until all appropriate training has been completed and documented.					
Review Summary: All facilities, procedures, and practices have been reviewed by the IBC and are considered appropriate and acceptable.					
IBC Action/Decision:	BSO Approved				
❖ The BSO reviewed and approved the protocol subject to the adherence to the standard stipulations.					

Protocol:	24-373-A1	Amendment	Expiration Date:	1/16/2027

Title:	Protein homeostasis and sperm cell development
PI Name:	Chen
Brief Description of Project: This amendment is to revise the list of transgenes for expression in viral vector systems.	
Biological Materials Review Summary: This amendment includes use of the lentiviral vector system expressing reporter genes.	
NIH Guidelines: III-D	Highest BSL Level: BSL2 w/ BSL3 practices
Training: This protocol amendment requires the following biosafety training: Comprehensive Biosafety (BSL2), annual Bloodborne Pathogens, and Viral Vector Training. Personnel who have not completed the required training will not begin this work until all appropriate training has been completed and documented.	
Review Summary: All facilities, procedures, and practices have been reviewed by the IBC and are considered appropriate and acceptable.	
IBC Action/Decision: BSO Approved	
❖ The BSO reviewed and approved the protocol subject to the adherence to the standard stipulations.	

Protocol:	24-299-A5 Amendment	Expiration Date:	4/12/2027
Title:	Membrane Protein Characterization		
PI Name:	Clemons		
Brief Description of Project: The main goal of this project is to study the infectivity of the bacteriophage Q-beta and structurally characterize the phage in complex with a bacterial enzyme.			
Biological Materials Review Summary: The Q-beta bacteriophage will be grown in its bacterial host E. coli ATCC 23631 overnight and separated with centrifugation. Isolated phage will be cross-linked with coat protein for assembly and infectivity will be subsequently assessed with a plaque assay. Non-infectious phages will be selected for purification with sucrose gradient centrifugation and structural studies with cryogenic electron microscopy (cryo-EM).			
NIH Guidelines: III-D		Highest BSL Level:	BSL2 w/ BSL3 practices
Training: This protocol amendment requires the following biosafety training: Basic Principles of Biosafety (BSL1) Training. Personnel who have not completed the required training will not begin this work until all appropriate training has been completed and documented.			
Review Summary: All facilities, procedures, and practices have been reviewed by the IBC and are considered appropriate and acceptable.			
IBC Action/Decision: BSO Approved			
❖ The BSO reviewed and approved the protocol subject to the adherence to the standard stipulations.			

Personnel/Admin Amendments

- 23-291 Newman
- 24-293 Murray
- 24-313 Cai
- 24-373 Chen
- 24-374 SEEC
- 24-385 Morstein
- 25-281 Lois
- 25-347 Orphan
- 25-358 Demirer
- 26-210 Kornfield

4. Other Business

   A. NIH Report – Needlestick

      The BSO informed the committee about a needlestick sustained by an employee of an external company conducting research using Caltech laboratory spaces and under the purview of Caltech's IBC. All corrective actions have since been completed or are in progress. The NIH was notified and a formal report will be filed with NIH.

   B. IBC PAS

      The BSO presented a brief overview of the IBC PAS system and provided an update that the system is still in a testing phase. Training sessions will be scheduled at a later date for committee members, prior to system launch.

Next Meeting – April 7, 2026

Meeting adjourned at 4:02pm

Approved by the IBC 4/7/26