

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

Date: June 2, 2026

Time: 2:35 PM

Location: Zoom Videoconference

Voting Members: R. Ismagilov, M. Doshi, L. Cai, W. Gao, L. Quenee, N. Siladke, A. Grossman, M. Barsever, N. Singh, K. Lencioni, C. Cortese, E. Hisserich, F. Chen, M. Coleman

Nonvoting: 2 attendees

Guests: 1 attendee

Other: 1 attendee

Called to order at 2:36 pm, with a quorum in attendance.

1. Announcements
2. Old Business

A. Protocols - Approved Pending Modifications, Modifications Complete

The following protocols were previously approved pending implementation of additional IBC-required modifications from the May 5 meeting. The modifications have been completed/implemented and the protocols are approved:

Protocol:	26-329	De Novo	Expiration Date:	6/12/2026
Title:	Mechanisms of DNA repair			
PI Name:	Semlow			
Modifications Completed: 5/27/2026				

Protocol:	26-214	De Novo	Expiration Date:	6/12/2026
Title:	Understanding the neural basis of motivated behavior for homeostatic regulation			
PI Name:	Oka			
Modifications Completed: 6/2/2026				

B. Protocols - Approved Pending Modifications, Modifications Pending

The following protocol was previously approved pending implementation of additional IBC-required modifications from the May 5 meeting. The lab is still working on completing the modifications:

Protocol:	25-395-A2	Amendment	Expiration Date:	10/12/2028
Title:	Dynamics of bacterial communities in complex fluids			
PI Name:	Datta			

Anticipated Completion: 7/7/2026

3. New Business

A. Approval of Minutes: May 5, 2026

The May 5 meeting minutes were approved by a majority of the IBC. There was 1 abstention from a member who was not present at the May 5 meeting.

B. Protocols – Full Committee Review

Protocol:	26-028	De Novo	Expiration Date:	7/12/2026
Title:	Transduction of hematopoietic precursors and cell lines with retroviral vectors			
PI Name:	Rothenberg			
Brief Description of Project: Our project is to understand the actions of a set of regulatory proteins that control gene expression in immature blood cells so as to guide stem cells to become T cells of the immune system. We use replication-incompetent viral vectors to add or to remove individual regulatory proteins to immature mouse blood cells to test how this changes their ability to become T cells.				
Biological Materials Review Summary: 1. Viral vectors. We use replication-incompetent retroviral vectors, packaged in coats that make them incompetent to infect human cells. We have also made some use of third-generation, replication-incompetent lentiviral vectors, also packaged by our lab in coats that make them incompetent to infect human cells. These conditions make it possible to work with all the vectors themselves at BSL-1 safety level. These vectors were purchased from commercial vendors, obtained with an MTA from other investigators, or adapted from those original sources within our lab.				
2. Infectious agents. None.				
3. Human Cell Lines: We use long-established human tissue culture cell lines, Phoenix-Eco and HEK-293T, to package our viral vectors in coats that only allow them to infect mouse cells. We work with these human cell lines in BSL-2 conditions only.				
4. Mouse Cell lines: We carry out some in vitro experiments in three kinds of immortal mouse cell lines: Scid.adh.2C2 immature T cells, NIH-3T3 fibroblasts, and E14Tg2a.4 embryonic stem cells. Cell lines were purchased from ATCC or MMRRRC or obtained with an MTA agreement. As noninfectious mouse cell lines, these are handled under BSL-1 conditions.				
5. Mouse models: We use cells from mice, bred in our colony and kept in specific pathogen-free conditions under IACUC-approved protocols. Mice are not infected with pathogens or viral vectors. All animal work is conducted in compliance with institutional biosafety and animal ethics regulations.				
NIH Guidelines:	III-D	Highest BSL Level:	BSL2	
Training: This protocol 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:	Approved			

❖ The committee reviewed and unanimously approved this protocol subject to adherence to the standard stipulations.
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Protocol:	26-218	De Novo	Expiration Date:	7/12/2026
Title:	Molecular cloning and protein expression in E. coli, human and Drosophila cultured cells, and transgenic Drosophila			
PI Name:	Zinn			
Brief Description of Project: We are trying to understand how neurons form specific synaptic connections during development. We use molecular genetics in Drosophila systems for this work. We are also trying to map in vitro interactions among human and Drosophila cell surface proteins. This work involves expressing these proteins in human and Drosophila cells.				
Biological Materials Review Summary: We use basic cloning in E. coli to build mammalian expression plasmids, HEK 293-6E (Expi293) cells to express extracellular domains of human cell surface proteins, and nanoparticles made in E. coli for coupling to extracellular domains of cell surface proteins, antibodies, and tagged GFP fusion proteins.				
We make gRNA plasmids, which are sent out for generation of transgenic flies with nonhazardous modifications of endogenous genes.				
NIH Guidelines:	III-E, III-F	Highest BSL Level:	BSL1/ACL1 in Zinn Lab BSL2 at PEC	
Training: This protocol requires the following biosafety training: Basic Principles of Biosafety (BSL1) or 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: Approved				
❖ The committee reviewed and unanimously approved this protocol subject to adherence to the standard stipulations.				

Protocol:	26-323	De Novo	Expiration Date:	7/12/2026
Title:	Cell cycle progression, centriole and organelle trafficking in Drosophila and mammalian model systems			
PI Name:	Glover			
Brief Description of Project: By using Drosophila as a primary discovery tool and mammalian organoids, cells and mice as clinical correlates, our lab is essentially studying the fundamental rules of the cell cycle. We focus on centriole duplication and organelle trafficking, to understand diseases like Ciliopathy or the mechanical drivers of tumorigenesis.				
Biological Materials Review Summary: This research utilizes transgenic Drosophila, human and mouse cell lines, replication-incompetent lentiviral vectors, and lab strains of E. coli.				
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, 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: Approved
❖ The committee reviewed and unanimously approved this protocol subject to adherence to the standard stipulations.

Protocol:	26-330	De Novo	Expiration Date:	7/12/2026
Title:	Stem Cell and Embryo Engineering Center (SEEC) with mouse sperm, oocytes and embryos			
PI Name:	Nakagawa (SEEC)			
Brief Description of Project: The Stem Cell and Embryo Engineering Center (SEEC) will provide mouse genome engineering services and conduct research to drive technological advances in genome engineering and stem cell biology.				
Biological Materials Review Summary: Mouse Models: Mice are housed in a specific pathogen-free facility under IACUC-approved protocols. All animal work was conducted in compliance with institutional biosafety and animal ethics regulations.				
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, 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: Approved				
❖ The committee reviewed and unanimously approved this protocol subject to adherence to the standard stipulations.				

Protocol:	24-314-A3	Amendment	Expiration Date:	12/12/2027
Title:	Computational protein Design – in vitro testing phase.			
PI Name:	Mayo			
Brief Description of Project: The lab has previously approved projects to study immunomodulatory potential of extracellular vesicles. This amendment incorporates adding additional human cell lines and replication-incompetent viral vectors to allow a variety of new projects starting this year to further determine the immunomodulatory potential of extracellular vesicles.				
Biological Materials Review Summary: This amendment is to add several human cell lines and third generation replication-incompetent lentiviral vectors.				
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, 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 Modification - Admin
❖ The committee reviewed and unanimously deferred approval of this protocol pending implementation of the following modification by the IBC administrator: ○ Revision of occupational health language with edits as discussed during the meeting.

Protocol:	23-292-A5	Amendment	Expiration Date:	11/12/2026
Title:	Bioelectronic devices for personalized medicine			
PI Name:	Gao			
Brief Description of Project: This amendment involves the use of tumor models in animal models to evaluate implantable drug-delivery devices. The study includes a 4T1 orthotopic breast tumor model in mice and a subcutaneous VX2 tumor model in animals using frozen VX2 tumor tissues.				
Biological Materials Review Summary: This protocol involves the use of ATCC-derived 4T1-Luc mouse breast cancer cells and frozen VX2 tumor tissue to establish tumor models in animal models. These materials will be handled under IBC-approved containment procedures for preclinical evaluation of localized treatment approaches.				
NIH Guidelines:	N/A	Highest BSL Level:	BSL2	
Training: This protocol 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.				
COI/Recusal: W. Gao was recused from the discussion of this protocol.				
IBC Action/Decision: Approved				
❖ The committee reviewed and unanimously approved this protocol subject to adherence to the standard stipulations.				

C. Protocols - Expedited Review

Protocol:	26-364	De Novo	Expiration Date:	7/12/2026
Title:	Genetics tool development in Steinernema nematodes and Xenorhabdus bacteria			
PI Name:	Cao			
Brief Description of Project: Develop genetic tools in soil-dwelling nematode Steinernema hermaphroditum to better establish this species to be a model for studying host-microbes interactions.				
Biological Materials Review Summary: This project aims to develop genetic and synthetic biology tools in Steinernema nematode and Xenorhabdus bacteria, including using standardized molecular biology reagents, such as DNA, RNA, and Cas9 protein.				
NIH Guidelines:	III-D	Highest BSL Level:	BSL1	
Training: This protocol 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: Chair Approved
❖ The Chair reviewed and approved the protocol subject to the adherence to the standard stipulations.

Protocol:	24-093-A2	Amendment	Expiration Date:	6/12/2027
Title:	Understanding the roles of carbohydrates in biology and disease			
PI Name:	Hsieh-Wilson			
Brief Description of Project: This amendment is to include additional replication-incompetent viral vector constructs (AAV and lentiviral vector) expressing a non-hazardous transgene to be administered in vivo. This purpose of this experiment is to evaluate the effects of targeting CS sulfation on ECM remodeling and synaptic pruning, ultimately providing a better understanding of the molecular mechanisms underpinning neural plasticity.				
Biological Materials Review Summary: This amendment involves replication-incompetent viral vectors (AAV, lentiviral vector) and an animal model.				
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: Chair Approved				
❖ The Chair reviewed and approved the protocol subject to the adherence to the standard stipulations.				

Protocol:	26-210-A1	Amendment	Expiration Date:	3/12/2029
Title:	Roles of RGD containing peptides to retinal cell functions			
PI Name:	Kornfield			
Brief Description of Project: We are adding human ocular tissues, which will be utilized to evaluate and optimize the performance, targeting, and delivery characteristics of the biolistic particle delivery platform in clinically relevant tissue.				
Biological Materials Review Summary: This protocol amendment includes the addition of human-derived specimens, which will be handled with BSL-2 precautions.				
NIH Guidelines:	III-E, III-F	Highest BSL Level:	BSL2	
Training: This protocol 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:	23-335-A2	Amendment	Expiration Date:	11/12/2026
Title:	BSL2/3 Laboratory – Risk assessment and Access Process			
PI Name:	Bjorkman			
Brief Description of Project: This amendment is to include an additional experimental aim with no change in biological materials. We will transfect previously approved human cell lines with DNA plasmids to assemble non-infectious virus-like particles for characterization and downstream structural analysis studies.				
Biological Materials Review Summary: This amendment involves human cell lines and plasmids.				
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, 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: Chair Approved				
❖ The Chair reviewed and approved the protocol subject to the adherence to the standard stipulations.				

Protocol:	25-352-A1	Amendment	Expiration Date:	7/12/2028
Title:	Resnick Ecology and Biosphere Engineering Facility			
PI Name:	Glasser			
Brief Description of Project: The Core Facility provides a laboratory space to conduct BSL1 and BSL2 work. This amendment expands the scope of microorganisms handled in the facility to provide a Caltech Lab with a laboratory space to conduct work with <i>S. aureus</i> .				
Biological Materials Review Summary: This protocol amendment includes the addition of <i>S. aureus</i> , which will be handled with BSL-2 precautions.				
NIH Guidelines:	III-D, III-E, III-F	Highest BSL Level:	BSL2	
Training: This protocol 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:	26-360-A1	Amendment	Expiration Date:	01/12/2029
Title:	Advancement of Planetary Protection to Complete Biologic Inventory via Cryo-Electron Microscopy			
PI Name:	C. Parker			

Brief Description of Project: There is a growing thought in the astrobiology community that bacteriophage could serve as a potential target for future life detection missions, and similar to issues of using the NASA Spore Assay (NSA) to detect non spore forming bacteria, there is no current way to detect bacteriophage that maybe on the surfaces of spacecraft. Phage pose a risk for both contaminating other planets and icy moons as well as possibly causing a false positive for finding 'life' if components of the phage remain.			
Biological Materials Review Summary: We plan to expand this research to include two more spore forming bacteria, and two phage, along with a pre freezing treatment to lyse phage prior to Cryo-TEM analysis. All materials proposed are nonpathogenic.			
NIH Guidelines:	N/A	Highest BSL Level:	BSL1
Training: This protocol 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: Chair Approved			
❖ The Chair reviewed and approved the protocol subject to the adherence to the standard stipulations.			

Protocol:	23-370-A4	Amendment	Expiration Date:	10/10/2026
Title:	Culturing of bacteria from isolates and clinical samples			
PI Name:	Ismagilov			
Brief Description of Project: We are adding additional B. fragilis clinical isolates to be handled in the same manner as previously approved.				
Biological Materials Review Summary: We are adding additional B. fragilis clinical isolates to be handled with BSL2 precautions.				
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, and ATD 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.				
COI/Recusal: R. Ismagilov was recused from the discussion of this protocol.				
IBC Action/Decision: BSO Approved				
❖ The BSO reviewed and approved the protocol subject to the adherence to the standard stipulations.				

Personnel/Admin Amendments

- 23-292 Gao
- 24-296 Mazmanian
- 24-310 Parker
- 24-314 Mayo
- 25-261 Bjorkman
- 25-270 Mazmanian
- 25-271 Prober
- 25-315 Wang

- 25-320 Andersen
- 25-390 Mazmanian
- 25-393 Taboada

4. Other Business

A. IBC PAS

The BSO provided an update regarding the transition to the online IBC PAS system. IBC PAS testing is still underway with an anticipated go live date in mid-June. This will begin with a soft rollout to few labs for additional testing, a full rollout to campus in late July, and the first IBC meeting transitioned to the system to occur in September. IBC Member Training will be provided prior to the transition, anticipated to occur at the end of July.

B. CDPH Inspection

The BSO provided an update regarding the CDPH inspection. Overall, the inspection went well. The CDPH inspector provided good feedback and noted the strong engagement from the campus. Inspection findings will be emailed to the laboratories for follow-up.

Next Meeting – July 7, 2026

Meeting adjourned at 3:13pm

Approved by the IBC 7/7/26