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UNIVERSITY OF CALIFORNIA, IRVINE
IBC MINUTES 09/17/2025

I. **QUORUM:** MET
II. **REVIEW MEETING MINUTES**: Meeting minutes from August 20, 2025, APPROVED
III. **OLD BUSINESS:** None
IV. **NEW BUSINESS**: Introduction of new faculty and community committee members and review of campus wide Bloodborne Pathogen and Aerosol Transmissible Disease Exposure Control Plan
V. **REVIEW OF PROTOCOLS**

#BUA-R571	**PI: Jang, Cholsoon**	***Title: Metabolic flux in vivo***
RESUBMISSION		**Dept: Biological Chemistry**

Summary: This lab studies the metabolic effects and underlying mechanisms of dietary nutrients such as fructose, alcohol, and fiber on health. In vivo will be provided with certain dietary nutrients acutely or chronically and blood/tissue metabolites will be isolated and analyzed by liquid chromatography mass spectrometry. The lab will also use AAV to overexpress or knock down genes of interest: c-Met (hepatocyte growth factor receptor) – A receptor tyrosine kinase that promotes proliferation, survival, and motility. Overexpression of c-Met is associated with tumorigenesis in the liver and other organs.

Other genes of interest include: PIK3CA(H1047R) – A gain-of-function mutation in the catalytic subunit of PI3K, leading to constitutive activation of the PI3K/AKT pathway. Frequently found in human cancers and strongly oncogenic in the liver. SB13 (Sleeping Beauty transposase) – A transposase that facilitates genomic integration of transposon-flanked c-Met and PIK3CA constructs in hepatocytes.

REVIEW COMMENTS: Reviewers requested more information to clarify vector use and oncogenic plasmids for experiments in vivo and in cell culture. Additionally, clarification is needed of the types of human cells or tissue samples being used.

IBC DETERMINATION: All committee members voted to APPROVE after administrative updates are submitted. The listed agents below will be approved with the containment level and stipulations.

Agent/Material	Containment Level	NIH RG/CDC BSL	Stipulations	Special Hazards	NIH Guidelines
AAV (purchased) induced overexpression or knock down genes of interest tumor formation in vivo	BSL-1, ABSL-1	RG1	--	--	III-D
Modified human cells and tissue samples	BSL-2	--	--	--	III-E

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#BUA-R517	PI: Drayman, Nir	*Harnessing cell-to-cell variability to understand viral infection outcomes*
RENEWAL		**Dept: Molecular Biology & Biochemistry**

Summary: The goal of this research is to learn what determines the outcome of viral infections at the single cell level and use that knowledge to develop novel antiviral therapies. The lab will knock out genes of interest in herpes virus and host cells, using fluorescent imaging technology the aim to use machine learning to develop a library of images to identify individual cell level infection. Once the patterns of single cell infection outcomes the lab will screen or design small molecules with the aim of inhibiting cellular processes necessary for infection or activating cellular processes that can abort infection in vitro. Updated information is needed regarding the work with EBV, Adenovirus, Coronavirus, CMV, and Karposi Sarcoma Virus.

REVIEW COMMENTS: The committee asked the PI to identify the human genes of interest and what is being knocked down within the cell lines. Minor clarifications and document clean-up are needed.

IBC DETERMINATION: All committee members voted to APPROVE after administrative updates are submitted. The listed agents below will be approved with the containment level and stipulations described.

Agent/Material	Containment Level	NIH RG/CDC BSL	Stipulations	Special Hazards	NIH Guidelines
Human Coronavirus (strains OC43, 229E, NL63, HKU1)	BSL-2	RG-2	BSC	--	--
Kaposi sarcoma-associated herpesvirus (KSHV) -HHV-8	BSL-2	RG-2	BSC	--	--
Cytomegalovirus (CMV)	BSL-2	RG-2	BSC	--	--
Herpes Simplex Virus WT and lab generated mutants (KO interferon response genes, attenuated mutants lacking viral transcription genes, glycoprotein deleted, and fluorescently tagged genes of interest)	BSL-2	RG-2	BSC	--	III-D
Epstein-Barr virus (B95-8)	BSL-2	RG-2	BSC	--	--
Adenovirus	BSL-2	RG-2	BSC	--	--

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Fourth-generation lentivirus used to transduce established human and primary cell lines with fluorescent protein markers	BSL-2	RG-3	BSC	--	III-D, III-E
Non-pathogenic *E. coli* for plasmid cloning and protein expression	BSL-1	RG-1	--	--	--

#BUA-R283	PI: Lee, Grace	***The role of transposable element's epigenetic effects in genome evolution***
RENEWAL		**Dept: Ecology & Evolutionary Biology**

Summary: This lab aims to study how transposable elements (TE) influence genome function and evolution through epigenetic mechanisms, the understanding of eukaryotic genome evolution and the genetics of inherited diseases and cancers caused by TEs. Through crossbreeding, they will generate a reporter construct system of fluorescence proteins in Drosophila melanogaster. This will allow both a candidate-gene study and an unbiased genome-wide mapping to identify the causes for varying epigenetic effects of TEs.

REVIEW COMMENTS: No safety concerns were identified but minor clarifications and document clean-up are needed.

IBC DETERMINATION: All committee members voted to APPROVE after administrative updates are submitted. The listed agents below will be approved with the containment level and stipulations described.

Agent/Material	Containment Level	NIH RG/CDC BSL	Stipulations	Special Hazards	NIH Guidelines
Drosophila melanogaster crossbreeding	BSL-1 ACL-1	--	All fly waste must be rendered inactive so that no viable adults, larvae, or eggs will be released into the environment. Any unwanted stocks must be autoclaved prior to disposal in the biohazard waste bins. Vials with adults and potentially viable larvae and eggs should either be stored at -20°C overnight or autoclaved prior to disposal into the biohazard waste.	--	III-D

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#BUA-R238	PI: Pathak, Medha	*Molecular sensos and transducers of mechanical forces in cells*
RENEWAL		**Dept: Physiology & Biophysics**

Summary: The lab studies both Piezo1 ion channel protein and its role in neural development and Alzheimer's disease progression and pathology. Plasmid and lentiviral vectors, CRISPR/Cas9 (siRNA or shRNA) are used to study genes of interest in cell differentiation, development, and disease pathology in Alzheimer's model and oncogenesis. Analysis includes optical patch clamp measurements and live-cell total internal reflection fluorescence microscopy. Proteins of interest (e.g. mEGFP, mCherry, tdTomato, gCaMP. HaloTag, Snaptag) will be altered to create fluorescent tags. Analysis will include optical patch clamp measurements and live-cell Total Internal Reflection Fluorescence Microscopy, and electrophysiology assays. Cells and organs will be harvested from Piezo 1 KO transgenic in vivo models and crosses for genetic testing and evaluation cellular development.

REVIEW COMMENTS: No safety concerns were identified but minor clarifications and document clean-up are needed.

IBC DETERMINATION: All committee members voted to APPROVE after administrative updates are submitted. The listed agents below will be approved with the containment level and stipulations described.

Agent/Material	Containment Level	NIH RG/CDC BSL	Stipulations	Special Hazards	NIH Guidelines
E. coli for plasmid DNA production	BSL-1	RG-1	--	--	III-F
Plasmids and CRISPR/Cas9 transfected into human primary established cell lines, and iPSCs to enhance or KO Piezo1, create brain organoids and differentiated cell types	BSL-2	--	BSC.	--	III-E
Third generation lentiviral vector to introduce Neurogenin2 and Cdt1 and Geminin gene fragments	BSL-2	RG-3	BSC.	--	III-D
Plasmids and CRISPR/Cas9 in established and primary cell lines	BSL-1	--	--	--	III-D

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#BUA-R537	PI: Plikus, Maksim	*A Genetic Model of Wound Healing of Human Facial Skin Tissue Using an Established in vivo Model*
RENEWAL		**Dept: Developmental & Cell Biology**

Summary: This lab will be looking at wound healing in mammals that leads to skin regeneration, instead of skin repair. They will be using in vivo models to 1. characterize follicle and adipose tissue neogenesis; and 2. understand the molecular signals controlling these phenomena in brow, forehead, eyelid, and cheek skin. This will be achieved through skin grafting. Analysis will look at histopathologic, RNA, and transcriptomic changes.

REVIEW COMMENTS: No safety concerns were identified but minor clarifications and document clean-up are needed.

IBC DETERMINATION: All committee members voted to APPROVE after administrative updates are submitted. The listed agents below will be approved with the containment level and stipulations described.

Agent/Material	Containment Level	NIH RG/CDC BSL	Stipulations	Special Hazards	NIH Guidelines
hESC	BSL-2	--	BSC	--	--
Human materials grafted in vivo	BSL-2 ABSL-2	--	--	--	--
Lipid nano particle delivery of mRNA, targeting signaling proteins in hair cycle and development, fluorescently tagged, administered in vivo	BSL-1 ABSL-1	--	--	--	III-D

#BUA-R022	PI: Thompson, Leslie	*Research of Huntington's disease*
RENEWAL		**Dept: Psychiatry & Human Behavior**

Summary: The lab studies the causes of late-onset neurodegenerative diseases, with a focus on Huntington's disease (HD). HD is caused by a genetic mutation that leads to problems with the huntingtin protein, resulting in brain cell damage. The projects involve the use of cell and in vivo models to understand how the mutated protein causes disease and how the normal protein functions.

The project also aims to test potential treatments, such as small molecules, RNA inhibitors, and stem cells, to see if they can correct the molecular problems caused by the mutation. Promising treatments

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are first tested in cells and then in vivo models, with the goal of developing therapies that could slow or reverse disease progression.

REVIEW COMMENTS: No safety concerns were identified but minor clarifications and document clean-up are needed.

IBC DETERMINATION: All committee members voted to APPROVE after administrative updates are submitted. The listed agents below will be approved with the containment level and stipulations described.

Agent/Material	Containment Level	NIH RG/CDC BSL	Stipulations	Special Hazards	NIH Guidelines
Non-pathogenic E coli used for vector cloning	BSL-1	RG-1	--	--	III-F
Lentivirus used to transfect cell lines with shRNA and micro-RNA	BSL-2	RG-3 (Lentivirus)	BSC	--	III-D
Human primary and established cells,	BSL-2	--	BSC	--	--
immortalized striatal neurons, immortalized striatal neurons and PC12 cells	BSL-1	--	--	--	--
Unmodified fixed postmortem human brain tissue	--	--	--	--	--
Human stem cells will be implanted in the brain of in vivo models	ABSL-2	--	housing at ABSL-2 for 48 hours	--	--
AAV will be introduced into the in vivo models for expression of genes of interest	ABSL-1	--	housing at ABSL-2 for 48 hours	--	III-D

#BUA-R057	PI: Zi, Xiaolin	*Signaling mechanisms of carcinogenesis process*
RENEWAL		**Dept: Urology**

Summary: Cancer develops because of major genetic changes. Some genes (oncogenes) can drive cancer when they are too active, while others (tumor suppressors) normally prevent cancer but stop working correctly. To study this, researchers will increase or decrease the activity of these genes in cancer cells and see how it affects their growth, movement, and spread. The goal is to find out whether certain genes could be useful as drug targets. In this project, prostate and bladder cancer cells, along with fibroblasts from tumors and normal tissue, will be tested with gene modifications or anti-cancer drugs.

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REVIEW COMMENTS: The committee asked the PI to name the materials/agents in the BUA known to cause tumor formation and/or harm to a human embryo. The committee instructed the PI to describe how their lab minimizes the use of sharps and maximizes the use of safer engineered sharp devices. Minor clarifications and document clean-up are needed.

IBC DETERMINATION: All committee members voted to APPROVE after administrative updates are submitted. The listed agents below will be approved with the containment level and stipulations described.

Agent/Material	Containment Level	NIH RG/CDC BSL	Stipulations	Special Hazards	NIH Guidelines
Non-pathogenic E coli (JM-109, DH5a) used for vector cloning	BSL-1	RG-1	--	--	III-F
3rd generation lentivirus for stable integration and knockdown genes of interest	BSL-2	RG-3	BSC	--	III-D
In vivo models will be injected (Intravenous, subcutaneous, intraperitoneal) with unmodified and lentiviral-transduced established human cell lines	ABSL-2	--	housing at ABSL-2 for 48 hours	--	III-D
Human primary cells treated with anti-cancer chemical compounds to evaluate cell growth and apoptosis	BSL-2	--	BSC	--	--
Cancer cell lines, including PC3, 22Rv1, C4-2B, and CAFs and NAFs transfected with mammalian expression vector for stable expression of genes and xenograft growth assay.	BSL-2	--	BSC	--	--

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BIOSAFETY REVIEW- NIH Exempt

1.	BUA-R449	Albrecht, Lauren	Amendment	Addition of locations and personnel
2.	BUA-R221	Bota, Daniela	Amendment	Addition of 4 human iPSC cell lines
3.	BUA-R258	Gregory, Anthony	Amendment	Addition of locations
4.	BUA-R262	Gregory, Anthony	Amendment	Addition of locations
5.	BUA-R102	Gupta, Sudhir	Amendment	Removal of personnel
6.	BUA-R609	Lakatos, Anita	Amendment	Addition of human cells
7.	BUA-R588	Martiny, Jennifer	New	E. coli, C. pusillium, unmodified
8.	BUA-R074	Masri, Selma	Amendment	Addition of locations
9.	BUA-R287	Pannunzio, Nicholas	Amendment	Addition of locations
10.	BUA-R29	Tenner, Andrea	Amendment	Removal of rAAV experiments
11.	BUA-R241	Tjenalooi, Stephanie	Amendment	Update personnel
12.	BUA-R634	Yu, Jianhua	Amendment	Addition of locations and lab personnel.

VI. ADJOURNMENT

The next scheduled IBC meeting is **Wednesday, October 15, 2025.** It will be held via Zoom. If the full committee review protocols are not received by the next deadline date and there are no agenda items for full committee discussion, the meeting will be canceled. Members will be notified via e-mail of meeting cancellations one week before the scheduled meeting.