Illinois State University

Institutional Biosafety Committee (IBC) Meeting Minutes

Date: 3/19/2026

Location: JH 228 & Zoom

Start time: 1:09 p.m. **End time:** 2:07 p.m.

Members Present: Adam McCrary, Tom Hammond, Viktor Kirik, Kathy Spence, Wolfgang Stein out 1:54, Amy Gilliland

Members Absent: Riley Francis, Tom Anderson

Guests Present: None

Staff Present: Jessica Lowe

I. Chair Reminder- Declare Conflicts of Interest for Protocol Review

a. None

II. Review of 2/19/2026 IBC Meeting Minutes

a. Motioned to approve minutes.

Motion: WG motioned to approve, AG seconds

For: 6; **Against:** 0; **Abstain:** 0

III. Prior Business

i. None

IV. Protocol Review

a. **Full Committee Review- New Applications**

i.

IBC Protocol #	PI	Title	BSL	Risk Group	Building
IBC-2026-0000040	Kevin Edwards	Microscopy studies of epithelial cell biology in Drosophila melanogaster	1	1	SLB

Project Overview:

We generate mutant fruit flies (Drosophila melanogaster) using genetic crosses, then characterize them using microscopy and molecular biology techniques including dissection, fixation with formaldehyde (less than 1 ml at a time), immunostaining, grinding flies in mild buffer to extract DNA, and PCR with agarose gel electrophoresis. No bacteria-based rDNA work is proposed.

Risk Assessment/Discussion:

Low

Risk assessment should be low for rDNA work.

Training:

CITI Training certificates were included in the protocol.

NIH Guidelines Section:

Section III-E2: This research involves genetic engineering of whole plants by recombinant or synthetic nucleic acid molecule methods.

Occupational Health Representative review:
This protocol does not require any medical screening. Appropriate controls are in place to mitigate injuries and lab-acquired infections.

Additional Comments:

- Options: Check "yes" in response to recombinant and synthetic nucleic acid molecules in the option section.
- Describe any RDNA currently in storage and not being actively used.
- Overview: fly lines are genetically modified and contain rDNA (a recombinant transposon) - include the rDNA section.
- Facilities: Add room in SLB and any other room that will be used for flies or rDNA storage.
- Transport and shipping: should be marked "yes". Flies will be transported between rooms.
- Personnel section: For Kevin and Benjamin, activities that will be performed under the activities tab for each personnel must be marked. Compensation should be checked yes for both individuals as well.
- Safety- Under safety, please use the help section to complete the lab acquired illness question.
- Safety- hazard chemical exposures in the LAI section was selected. The following description is recommended.
- • If eyes are exposed, immediately flush the exposure site for 15 minutes with water. If the exposure involved broken or compromised skin, use soap and water to thoroughly cleanse the wound.
  • If an emergency, call 911 or report to the nearest medical treatment facility. During business hours, OSF Occupational Health is the preferred provider for ISU.
  • If not an emergency, Dr. Kevin Edwards will notify the immediate supervisor, department chair, and Environmental Health and Safety as soon as possible. Accident reports will be submitted as appropriate depending on the individual's status (i.e., employee vs. non-employee).
- The PI must have a standard operating procedure for the use of formaldehyde. EHS will contact Dr. Edwards to conduct an exposure assessment to ensure compliance with the OSHA formaldehyde standard and Chemical Hygiene Plan.
- "If there is any suspected exposure to a biological agent not listed in this protocol..." in Reusable Equipment should be reworded. Biological agents requiring IBC approval shouldn't be used at all. Details on how any reusable equipment is cleaned and decontaminated without eluding to the use of unapproved biological agents.
- What agent would be used that is not listed in this protocol?
- Physical containment: Fly housing, the Viles will be sealed and how will escaped flied be captured.

Motion: Approve pending minor modifications listed above, with IBC chair review and confirmation. AM motioned to approve, VK seconds	For:6	Recuse:0	Against: 0	Abstain: 0	Absent: 2

ii.

IBC Protocol #	PI	Title	BSL	Risk Group	Building

IBC-2026-0000041	Jan-Ulrik Dahl	Bacterial responses to stress	2	2	SLB

Project Overview:

The proposed work aims to understand the effects of physiologically relevant antimicrobials oxidants (e.g. HOCl, HOBr, HOSCN, H2O2 etc.) and antibiotics (e.g. Tobramycin, Ciprofloxacin etc.) on pathogenic gram-negative bacteria, including *Pseudomonas aeruginosa*, uropathogenic *Escherichia coli*, *Salmonella enterica* subspecies enterica and *Klebsiella pneumonia*. The bacteria will be exposed to the respective antimicrobial/ antibiotic in various complex and defined media and growth and/or survival will be monitored to determine the minimal inhibitory concentration (MIC) and minimal bactericidal concentrations (MBC), respectively. In addition, their effects will also be studied under conditions in which bacteria form biofilms. We will extract RNA and analyze the expression of various genes of interest via RNAseq, RT-PCR, and/or promotor –lacZ fusion. Genes of interest will be cloned into vectors and proteins overexpressed, purified in K12 E. coli and characterized biochemically. Furthermore, we will create knock-out mutant strains in *P. aeruginosa* and uropathogenic *E. coli* by specifically deleting genes of interest. The gene deletion strains will be directly compared with their corresponding parental strains regarding their ability to form biofilms, their MICs/MBCs towards the antimicrobials/antibiotics, their motility. The gene deletion strains will also be complemented by transformation with the respective plasmid to determine whether the parental phenotype can be restored.

Risk Assessment/Discussion:

Medium

Increase improbable to moderate. Moderate for severity. This will align with the existing Medium final risk assessment per the matrix.

Training:

CITI Training certificates were included in the protocol.

NIH Guidelines Section:

Section E 1 and C1 should be checked.

Sections F3, F4, and F8 should not be checked.

Section III-D1: This research involves the introduction of recombinant or synthetic nucleic acid molecules into Risk Group 2, Risk Group 3, Risk Group 4, or Restricted Agents.

Section III-D2: This research involves the introduction of DNA from Risk Group 2, Risk Group 3, Risk Group 4, or Restricted Agents into nonpathogenic prokaryotes or lower eukaryotes.

Section III-F3: This research involves recombinant or synthetic nucleic acids that consist solely of the exact recombinant or synthetic nucleic acid sequence from a single source that exists in nature.

Section III-F4: This research involves recombinant or synthetic nucleic acids that consist entirely of nucleic acids from a prokaryotic host, including its indigenous plasmids or viruses when propagated only in that host (or a closely related strain of the same species), or when transferred to another host by well-established physiological means.

Section III-F8: This research involves recombinant or synthetic nucleic acids that do not present a significant risk to health or the environment as determined by the NIH Director following appropriate notice and opportunity for public comment (See Appendix C).

Appendix C-II: This research involves the use of recombinant or synthetic nucleic acid molecules in Escherichia coli K-12 host-vector systems.

Occupational Health Representative review:
This protocol does not require any medical screening. Appropriate controls are in place to mitigate injuries and lab-acquired infections.

Additional Comments:

- Vectors/Plasmids: Complete BSL, Risk Group classification, and exposure information for each plasmid.
- Tropism should be marked N/A.
- Infectious Agents: Klebsiella pneumonia is listed in the overview but not under the infectious agents. If this is not being used it can be removed from the overview section. For all bacteria, complete the following: Exposure sections to include a complete description of signs and symptoms of exposure, potential acute and chronic outcome of exposure including cancer risks, published medical management, vaccinations and prophylaxis recommendation for the agent(s), and what will be done in the event of exposure (e.g. contaminated sharps injury, contaminated fluid exposure, inhalation exposure, etc.) or laboratory-acquired illness.
- Section "This agent can be spread via" and include and describe "Other" if necessary.
- List the source(s) of the agent and whether experiments will result in acquisition of new characteristics of these infectious agents.
- Transportation: Yes, to local transportation.
- Personnel: The required CITI training must be uploaded for Dahl and Wilkinson. Personnel compensation should be marked yes.
- Safety: Provide location of autoclave(s) being used. Also, are lab coats and eye protection required at all times in the lab (see footnote #5).
- Use the information in the Help text to develop a response to responding to LAIs
- Are lab coats and goggles only required when performing work? As a visitor to the lab, we've never been informed that donning lab coats and eye protection is mandatory at all times.
- This section mentions animal rooms which is not applicable to the research. Also, are there specific entry requirements including immunization? The bullet points are too broad and need to be refined for accuracy.
- Are lab coats and goggles only required when performing work? See footnotes #1 and #5.
- Do we want to explicitly indicate the requirement to use integrator test strips in autoclaves to ensure sterilization prior to disposal?
- Add that the lab is locked when personnel are not present.

Motion: Approve pending minor modifications listed above, with IBC chair review and confirmation. WS motioned to approve, AM seconds	For: 6	Recuse: 0	Against: 0	Abstain: 0	Absent: 2

iii.

IBC Protocol #	PI	Title	BSL	Risk Group	Building

IBC-2026-0000044	Andres Vidal Gadea	Expression of recombinant transduction proteins using E. coli, C. Elegans, P. virginalis, and H. sapiens	2	2	SLB

Project Overview:

The work in the Vidal-Gadea laboratory investigates (1) the molecular and cellular mechanisms by which Duchenne muscular dystrophy (DMD) leads to muscle dysfunction and cell injury, and (2) the genetic and cellular basis of animal behavior.

To address these goals, the laboratory uses established model organisms, recombinant and synthetic nucleic acid methods, bacterial cloning strains, and human cell culture systems (including skeletal and smooth muscle cells). No infectious agents are used as experimental pathogens in this protocol.

1. DMD focused research (human cells and C. elegans)

Experiments focused on DMD use wildtype, mutant, and transgenic *Caenorhabditis elegans* and human cell culture models to identify conserved pathways involved in early muscle dysfunction, including calcium handling, membrane stress responses, and gene specific effects.

DMD related *C. elegans* experiments include behavioral assays, transgenesis, immunohistochemistry, calcium imaging or ratiometry, and related microscopy based analyses. Recombinant DNA constructs are used for reporter expression, rescue experiments, and gene perturbation studies in worms.

Human cell work includes the culture and analysis of immortalized human skeletal muscle (striated) myoblast lines, including LHCN M2, AB1071, and AB1190 (collaborator and Institut de Myologie de Paris provided lines used in our DMD studies), and HEK293T cells (293T, ATCC CRL 3216) for plasmid expression testing and, when needed, approved helper or packaging workflows for replication incompetent gene delivery systems.

Human smooth muscle work includes (a) immortalized gastrointestinal smooth muscle cell lines obtained from Mayo Clinic under MTA, specifically the human jejunal smooth muscle line (hJTM) and human colonic smooth muscle line (hCTM), and (b) commercially obtained primary smooth muscle cells used as low passage validation cultures, including human intestinal smooth muscle cells (HISMCs) from ScienCell Research Laboratories and primary human bladder smooth muscle cells from AcceGen Biotech (ABC-TC026G).

Human cells may be transfected using lipofection (for example, Lipofectamine 2000, Invitrogen) and may be genetically engineered using recombinant DNA and CRISPR Cas9 based methods.

Transfected mammalian cells may be used for live cell imaging, microscopy preparation, calcium measurements, and electrophysiology or related physiological recordings. Cells may also be fixed, immunostained, mounted on coverslips, and analyzed by epifluorescence and confocal microscopy.

All human cell work is conducted in a certified biological safety cabinet using BSL2 containment practices.

2. Animal behavior focused research (C. elegans and crayfish)

Experiments focused on the genetic and cellular basis of animal behavior use wildtype, mutant, and transgenic *C. elegans* and marbled crayfish (*Procambarus virginalis*) to identify and test genes and pathways involved in sensory function, neural function, and behavior.

This work includes behavioral assays, immunohistochemistry, transgenesis, calcium imaging or ratiometry, and recombinant DNA procedures to clone *C. elegans* and crayfish genes into expression vectors. These constructs are used for expression studies and functional tests in bacterial cloning strains, worms, and approved crayfish experimental workflows.

Recombinant DNA methods include PCR fusion, Gateway cloning, and CRISPR based approaches to generate expression constructs and targeted gene perturbations. To identify additional genes involved in behavior, the laboratory performs RNA interference reverse genetic screens and forward mutagenesis screens in *C. elegans* using ENU (N ethyl N nitrosourea), followed by phenotypic screening and genetic analysis.

3. Biohazardous materials and how they are used

Biohazardous materials used in this protocol include the following, and each is used only for the research purposes described above.

Recombinant DNA plasmids and expression vectors (including fluorescent reporters, shRNA constructs, and CRISPR Cas9 related constructs), used for cloning, transgenesis, gene expression, rescue experiments, and targeted genome editing in worms, crayfish workflows, and human cell cultures.

E. coli cloning and maintenance strains (including OP50, HT115, and DH5alpha), used for plasmid propagation, molecular cloning, and RNA interference feeding workflows in *C. elegans*.

Wildtype, mutant, and transgenic *C. elegans*, used for DMD and behavior experiments including transgenesis, imaging, immunohistochemistry, calcium measurements, behavioral analysis, and forward or reverse genetic screens.

Crayfish (*Procambarus virginalis*), used for behavior and cell function related experiments that may include recombinant expression workflows as described in the approved protocol.

Human cell lines and primary human smooth muscle cells, including LHCN M2, AB1071, AB1190, HEK293T (ATCC CRL 3216), hJTM, hCTM, ScienCell HISMCs, and AcceGen Biotech primary human bladder smooth muscle cells (ABC-TC026G), used for DMD related mechanistic studies, assay development, engineering, and cross system validation.

Transfection reagents (including lipofection reagents), used for delivery of plasmids and CRISPR Cas9 constructs into mammalian cells.

If required for specific approved mammalian gene delivery workflows, helper or packaging plasmids may be used to generate replication incompetent viral particles under BSL2 containment and approved biosafety procedures. No replication competent viral propagation is performed.

ENU mutagen (N ethyl N nitrosourea) may be used for forward mutagenesis screens in *C. elegans* under approved handling, decontamination, waste disposal, and chemical safety procedures (as applicable under institutional requirements).

4. Containment, preservation, and waste decontamination

Transgenic and mutant animals and cell lines may be cryopreserved in minus 80 degree C freezers or liquid nitrogen, as appropriate to the material and method.

All biological waste is decontaminated by either (1) bleach inactivation to a 10 percent final bleach concentration with a minimum 30-minute contact time, or (2) autoclaving at 121 degrees C for 30 minutes, according to laboratory biosafety procedures and institutional requirements.

Risk Assessment/Discussion:

Medium

Training:

CITI Training certificates were included in the protocol.

NIH Guidelines Section:

Section III-E1 qualifies here (no single DNA/RNA molecule containing a nearly complete viral genome) C1 qualifies.

Section III-D2: This research involves the introduction of DNA from Risk Group 2, Risk Group 3, Risk Group 4, or Restricted Agents into nonpathogenic prokaryotes or lower eukaryotes.

Section III-D3: This research involves the use of Infectious DNA viruses, Infectious RNA viruses, Defective DNA viruses, or Defective RNA viruses in the Presence of a Helper System.

Section III-D4: This research involves (1) the deliberate transfer of recombinant or synthetic nucleic acid molecules, DNA or RNA derived from recombinant or synthetic nucleic acid molecules, or recombinant or synthetic nucleic acid molecule-modified microorganisms into whole animals AND/OR (2) whole animals in which the animal's germline genome has been altered by recombinant or synthetic nucleic acid molecules (or nucleic acids derived therefrom).

Appendix C-II: This research involves the use of recombinant or synthetic nucleic acid molecules in Escherichia coli K-12 host-vector systems.

Occupational Health Representative Review:
This protocol does not require any medical screening. Appropriate controls are in place to mitigate injuries and lab-acquired infections.

Additional Comments:

- Vectors/Plasmids typo
- For each vector/plasmid description: Please provide a few plasmid names or info for the "highest" risk, if any, associated with plasmids in each section. For example, for Animal transgenesis plasmids (C. elegans and crayfish), under sources, something like this would be useful:
- "Addgene (e.g pLKO.1, pAAV-GFP), Fire Lab vector kit (https://www.addgene.org/kits/firelab/), in house PCR fusion/Gateway/CRISPR)".
- Transportation and shipping should be yes because cells are transported between labs.
- Personnel: select activities for everyone and respond to compensation questions- if Research Assistant in summer, check yes for compensation. Check PI for emergency contact
- Safety: remove cell number and put in Personnel section.

Motion: Approve pending minor modifications listed above, with IBC chair review and confirmation. WS motioned to approve, AM seconds	For: 6	Recuse: 0	Against: 0	Abstain: 0	Absent: 2

b. **Full Committee Review- Amendments**
    i. TABLED- NOT DISCUSSED

c. **Member Review- Upcoming for April Full Committee Review**
    i. Dahl 05B-2025, 06B-2025
    ii. Vidal-Gadea 03B-2025
    iii. Wilkinson 04B-2023, 05B-2023
    iv. Sedbrook 06B-2023

v. Jones 03B-2023
vi. Calderon 01B-2023
vii. Gatto
    1. Still awaiting revisions

V. New Business

a. None

VI. Review of Incidents

a. None

VII. Inspections/Ongoing Oversight

a. Six labs in SLB were inspected and the results of the inspection were reported to PIs, Biology Director, and IBC Chair.
b. Scheduled for Wednesday, April 8th from 2:00 pm - 4:30 pm

VIII. IBC Training

a. None

IX. Public Comments

a. None

X. Open Discussion

a. WS submitted his resignation to IBC. May will be his last meeting. The School of Biology has been notified and was asked for assistance in identifying a replacement member.
b. IBC has representation on IACUC and will be meeting with Police, Emergency Management, and committees to discuss potential exposure of first responders and important consideration when entering labs.

XI. Next Scheduled Meeting Date

a. Scheduled for Wednesday, April 16th 1:00-2:30 p.m.
b. JH 228 and Zoom

XII. Adjournment

a. The BSO (AM) moved to adjourn the meeting at 2:07 p.m. AG seconded.