LA-UR-26-22947

Approved for public release; distribution is unlimited.

Title:	LANL IBC Meeting Minutes, December 4, 2025
Author(s):	Ganguly, Kumkum Young, Carla Jo Logan
Intended for:	Report Environmental Regulatory Document
Issued:	2026-06-09 (rev.1)

Los Alamos
NATIONAL LABORATORY

Los Alamos National Laboratory, an affirmative action/equal opportunity employer, is operated by Triad National Security, LLC for the National Nuclear Security Administration of U.S. Department of Energy under contract 89233218CNA000001. By approving this article, the publisher recognizes that the U.S. Government retains nonexclusive, royalty-free license to publish or reproduce the published form of this contribution, or to allow others to do so, for U.S. Government purposes. Los Alamos National Laboratory requests that the publisher identify this article as work performed under the auspices of the U.S. Department of Energy. Los Alamos National Laboratory strongly supports academic freedom and a researcher's right to publish; as an institution, however, the Laboratory does not endorse the viewpoint of a publication or guarantee its technical correctness.

LANL IBC Meeting Minutes, December 4, 2025		
Element		**Notes**
Institution	*Los Alamos National Laboratory*	
Meeting Date	*Thursday, December 4, 2025*	
Meeting Time	*8: 34 AM – 11:06 AM*	
Meeting Type	*In person meeting and Virtual via Webex*	
IBC Members	1. Kumkum Ganguly, (IBC Chair/ Biology) 2. Georgia Ali, (BSO/ Industrial Hygiene/Biology) 3. Carla Jo Logan Young, (BSO Back-up/ Industrial Hygiene/Biology) 4. Sara Pasqualoni, (SOMD) 5. Armand Dichosa, (IBC Member/ Biology) 6. Sofiya N. Micheva-Viteva, (IBC Member/ Biology) 7. Jessica Kubicek Sutherland (IBC member/Biology) 8. Maureen Dolan, (Non-voting member/Observer - Legal) 9. Wesley David Boose, MD (IBC Member/ Occupational Health) 10. Kent Allen Candee, (IBC Member/ Industrial Hygiene) 11. Richard Honsinger, MD (Local Non-affiliated Community Member) 12. Joyce Richins, RN (Local Non-affiliated Community Member) 13. Tamas Torok, (Other DOE Non-affiliated Community Member)	Absent Absent Absent
Quorum	*The IBC has 12 voting members, and 1 non-voting member. For a quorum, 7 members are required to conduct business. Late arrivals and early departures to be noted here.*	**Quorum present.** Georgia Ali, Richard Honsinger, and Sara Pasqualoni were absent.
Other Individuals in Attendance		None
Call to Order		**IBC Action:** Call to order 8:34 AM
Review and approval of previous meeting minutes		**IBC Action:** September 4th, 2025 meeting minutes approved Votes: 7 members - For · For/Against/Abstain: (7 For/ 0 Against/ 0 Abstain)
Review of Prior Business		· Discussion of previous IBC applications.
New IBC Registration for Review		
PI Name(s)	*Name (s) Joshua Breidenbach and Rami Batrice*	
Registration Number/Title	*New Registration 2025: IBC-200* *Anti-Bio-fouling Treatments to Metal Surfaces*	Anti-Bio-fouling Treatments to Metal Surfaces
Project Overview	• **Agent name:** *Escherichia coli* (K12 (BSL1 lab strain)) ; *Pseudomonas aeruginosa* (PAO1, ATCC 10145); *Bacillus subtilis* (NCIB 3610); *Staphylococcus aureus* (25923); St*aphylococcus epidermidis* (RP62A); *Cobetia marina* DSM (4741); *Phaeobacter gallaeciensis* (700781). • **Agent Characteristics:** All bacteria cell lines are treatable with standard antibiotics. • **Sources and nature of the nucleic acid sequences (e.g., species, structural transgene, oncogene, toxin):** LANL owned by J.Breidenbach; ATCC HER-1018; ATCC 10145; ATCC 6051; ATCC 25923; ATCC 35984; ATCC 25374; ATCC 700781. • **Host(s), vector(s), and Donor Genes if used:** None • **Modifications (e.g., deletions, insertions, mutations to attenuate, or render replication incompetent) and note of any supporting documentation (published or unpublished data):** Design adherence of biofilms to metal coupons. • **Types of experimental manipulations that will be employed:** cell culturing and cytotoxicity of cells. • **Proposed biosafety containment levels at which each operation will occur**: BSL-2	• **Additional pertinent information:** · The PI is proposing to adhere biofilms on metal coupons looking for cytotoxicity. · All workers must be enrolled in the Human Pathogen Program. All bacteria will be manipulated in the biosafety cabinet. Cells will be expanded in disposable sterile flasks and tubes and during cellular manipulations, disposable filter pipets will be used. The maximum expected working volume of cells will be 25 ml. No sharps will be used in the BSL-1 or BSL-2 lab space. If centrifugation is required, care will be taken by applying aerosol- tight covers for the rotor buckets. Any spill must be cleaned with 10% household bleach: soaked for 30 min, wiped, and rinsed with water in accordance with the local IWD. PPE, consisting of disposable lab coat, safety glasses and nitrile gloves must be donned at all times in the BSL2 room and must be removed upon exiting the lab. Hand washing is required before leaving the BSL-2 room. · Section III-D-1-a - the protocol uses commercial risk group 2 bacterial cells that are treatable with standard antibiotic. Therefore, these cells shall be handled as containing potentially infectious agents using universal precautions.
NIH Guidelines Section	**III-D-1-a: Experiments involving the introduction of recombinant or synthetic nucleic acid molecules into Risk Group 2 agents will usually be conducted at Biosafety Level (BL) 2 containment.**	Commercial risk group 2 bacterial cells are treatable with standard antibiotics.
	• Individuals will wear Standard PPE for BSL-2 labs: a disposable long-sleeved lab coat, safety glasses, and nitrile gloves. Two pairs of gloves (typically one layer of nitrile/neoprene and one layer of vinyl) are worn and disposable sleeves. Hand washing is required before leaving the BSL-2 lab. Staff will be trained in laboratory safety practices, including sharps safety. • No sharps will be used in the BSL-2 labs for any of the activities. • Storage of working bacterial stocks will be in a controlled access room in a controlled access building in a locked -70C freezer. A biohazard sign shall be posted on the freezer door. Boxes retrieved from storage will be opened in the biosafety cabinet. This is to avoid personnel contamination in the event of leaky or broken tubes. A sample inventory (excel file) is used to identify the location of each item so that they can be easily retrieved. Current inventory is available to management or OSH personnel whenever requested. • Small waste bags will be used in the biosafety cabinet to collect pipette tips and other small materials that have come in contact with bacteria cells including metal coupons. When the work is completed for the day, these bags will be closed and the outside surface will be decontaminated with suitable disinfectant before removal from the BSC. They will be promptly placed in a larger biological waste bag inside of a secondary container (e.g. cardboard box with lid) which will be labeled for RG2. All waste bags must be autoclavable, and they are NOT to have any biohazard symbols printed on them. Each location has specific autoclave	Pathogenicity: A domesticated laboratory strain derived from *E. coli* . Nonpathogenic and extensively attenuated. Does not cause disease in healthy individuals. Route of transmission: Not considered transmissible as a pathogen; standard hygiene prevents any accidental exposure. Environmental stability: Survives for short periods in moist environments. Does not persist as well as wild-type strains. Infectious dose: Not applicable Concentration/Total volume: No more than 25 mL of a 10^8 cells/mL solution. Availability of effective medical preventive or treatment options: Not required; would be treatable by standard antibiotics if needed. Pathogenicity: A well-characterized wild-type research strain. Behaves like environmental P. aeruginosa: an opportunistic pathogen, able to cause infections mainly in hospitalized or immunocompromised individuals. Route of transmission: Dermal, oral. Not generally spread person-to-person. Environmental stability: High in moist environments; forms biofilms readily. Infectious dose: Not precisely defined; infections depend heavily on host susceptibility rather than dose. Concentration/Total volume: No more than 25 mL of a 10^8 cells/mL solution Availability of effective medical preventive or treatment options: Several classes of antibiotics are effective. Pathogenicity: A well-characterized wild-type research strain. Behaves like environmental *P. aeruginosa* : an opportunistic pathogen, able to cause infections mainly in hospitalized or immunocompromised individuals. Route of transmission: Dermal, oral. Not generally spread person-to-person. Environmental stability: High in moist environments; forms biofilms readily. Infectious dose: Not precisely defined;

Risk Assessment and Discussion		infections depend heavily on host susceptibility rather than dose. Concentration/Total volume: No more than 25 mL of a 10^8 cells/mL solution. Availability of effective medical preventive or treatment options: Several classes of antibiotics are effective. Pathogenicity: A natural isolate of Bacillus subtilis commonly used for studies of motility and biofilm formation. Generally nonpathogenic. Route of transmission: Not considered transmissible as a pathogen; standard hygiene prevents any accidental exposure. Environmental stability: High due to durable endospores. Infectious dose: Not applicable Concentration/Total volume: No more than 25 mL of a 10^8 cells/mL solution. Availability of effective medical preventive or treatment options: If infection occurs (rare), standard antibiotics are effective. Pathogenicity: It is non-MRSA but still represents typical S. aureus but causes skin infections, wound infections, occasional systemic disease in clinical contexts. Route of transmission: Dermal, oral. Direct contact, contaminated surfaces, occasionally droplets. Environmental stability: Moderately high; survives days on surfaces. Infectious dose: Not precisely defined; infections depend heavily on host susceptibility rather than dose. Concentration/Total volume: No more than 25 mL of a 108 cells/mL solution Availability of effective medical preventive or treatment options: Susceptible to multiple antibiotics (used as a susceptibility control strain). Pathogenicity: A well-known biofilm-forming clinical isolate is Staphylococcus epidermidis. Opportunistic pathogens are mainly associated with device-related infections (catheters, implants). Route of transmission: Direct contact or transfer from human skin (where it is naturally present). Environmental stability: Moderate; forms persistent biofilms on plastic/metal surfaces. Infectious dose: Not precisely defined; infections depend heavily on host susceptibility rather than dose. Concentration/Total volume: No more than 25 mL of a 108 cells/mL solution Availability of effective medical preventive or treatment options: May be resistant to some antibiotics but remains treatable. Pathogenicity: A marine bacterium, Cobetia marina, used in biofouling and surface-colonization research. Not known to be pathogenic to humans. Route of transmission: Dermal oral would be source of natural contact but not known to infect. Environmental stability: Unknown. Infectious dose: Not applicable. Concentration/Total volume: No more than 25 mL of a 108 cells/mL solution Availability of effective medical preventive or treatment options: Not applicable. No human disease association. Pathogenicity: A marine Alphaproteobacterium (Phaeobacter gallaeciensis); nonpathogenic to humans. Known for antimicrobial production in marine ecology. Route of transmission: Dermal oral would be source of natural contact but not known to infect. Environmental stability: Unknown. Infectious dose: Not applicable. Concentration/Total volume: No more than 25 mL of a 108 cells/mL solution. Availability of effective medical preventive or treatment options: Not applicable. No human disease association.
Training	**Document completion of required institutional level training as well as detailed laboratory or protocol specific training.**	· Current LANL Biosafety Training · Current LANL BSL2 Profiency checklist on file · Current LANL Chemical Worker
Occupational Health Representative review (if applicable):	Note any: • Vaccination requirements • Respiratory protection • Periodic review of any medical surveillance • Post-exposure response procedures	Medical Surveillance enrollment in Biohazard Program and Human Pathogen Program. Exposure shall be reported immediately to Occupational Medicine and prophylaxis will be determined by physician.
Biosafety Level Assignment	• BSL2 labs for all cell line work will be manipulated inside a Class II Biosafety Cabinet with use of appropriate PPE and methods.	· Individuals will wear Standard PPE for BSL-2 labs: a disposable long-sleeved lab coat, safety glasses, gloves (specific for handling select toxins/chemicals per SDS). Two pairs of gloves (typical example- one layer of nitrile/neoprene and one layer of vinyl) are worn and disposable sleeves.
	• Mixed Waste Requirements	· All waste bags will be used in the biosafety cabinet to collect pipette tips and other small materials that have come in contact with bacteria cells including metal coupons. When the work is completed for the day, these bags will be closed and the outside surface will be decontaminated with suitable disinfectant before removal from the BSC. They will be promptly placed in a larger biological waste bag inside of a secondary container (e.g. cardboard box with lid) which will be labeled for RG2. All waste bags must be autoclavable, and they are NOT to have any biohazard symbols printed on them. Each location has specific autoclave requirements due to size constraints and work being done. All autoclaving records are logged as specified by the LANL biosafety manual. Liquid waste (such as any excess culture volumes) will be inactivated by a final concentration of 10% bleach for 30 minutes before pouring down the sink with running water.
IBC Vote	***Note:*** *If the IBC grants approvals based on specific conditions being met, there should be a formal mechanism for verifying the conditions are fulfilled (e.g., the BSO will conduct an inspection to verify all Biological Safety Cabinets are up to date on certification before work may commence, all training must be completed before lab staff may begin work etc.).*	**IBC Action:** This proposal was moved to approve with condition Votes: 9 members - For · For/Against/Abstain: (9 For/ 0 Against/ 0 Abstain) · Conflict(s) of Interest: None.
PI Name(s)	*Name (s) Apoorv Shanker*	
Registration Number/Title	*New Registration 2025: IBC-201* *Pattern Recognition Receptor-based Computational Intelligence for Biothreat Surveillance and Evaluation (PRECISE)*	Pattern Recognition Receptor-based Computational Intelligence for Biothreat Surveillance and Evaluation (PRECISE)

Project Overview	• **Agent name:** Modified vaccinia virus (Ankara; propagated in BHK-21 cells); Human coronavirus (HCOV-229E; propagated in MRC5 cells); *S. aureus* (Rosenbach, Seattle 1945; Gram-positive bacteria); *Salmonella enterica* (enterica serovar Typhimurium strain CDC 6516-60; Gram-negative bacteria); *Candida albicans* ((Robin) Berkhout, Strain 3147); A549(Human lung adenocarcinoma cells); BEAS-2B (Bronchial epithelial cells); THP-1 (Monocyte cell line); U937 (Monocytic cell line); HL-60 (Promyeloblast cells); KG-1 (Macrophages); SC monocytes (Monocytes); Normal human bronchial epithelial (NHBE) cells (Primary epithelial cells); Human peripheral blood mononuclear cells (PBMCs)(Primary white blood cells); Human alveolar macrophages (Primary lung macrophages); BHK-21 (Baby hamster kidney cells; fibroblasts); MRC-5 (Human diploid fibroblast cells); Synthetic Nucleic Acids: [Poly(I:C); 5'-ppp-dsRNA; 3p-hpRNA; Poly(A:U); Riboxxol; ODN-2336; ODN-2006; ODN-2395]; Imiquimod (Imidazoquinoline amine); Resiquimod (Imidazoquinoline); ORN06/LyoVec (ssRNA complexed with transfection agent); Pam3CSK4 (Synthetic triacylated lipopeptide); Transfection Agent: [LyoVec; Lipofectamine; Branched and linear polyethyleneimine]; Muramyl dipeptide (Peptidoglycan); Lipopolysaccharide (Gram-negative bacterial endotoxin); Lipoteichoic acid (Gram-positive bacterial component); Flagellin from B. subtilis (Protein); Zymosan (Yeast cell wall component); β-glucan (Fungal polysaccharide); Non-viable Bacteria [Heat-killed *P. aeruginosa* ; Heat-killed *E. coli* O111:B4; Heat-killed *S. aureus*] . • **Agent Characteristics:** Immortalized cell lines and primary human-derived cells. • **Sources and nature of the nucleic acid sequences (e.g., species, structural transgene, oncogene, toxin):** ATCC VR-1508, ATCC VR-740, ATCC 25923, ATCC 14028, ATCC 10231, ATCC CRM-CCL-185, ATCC CRL-3588, ATCC TIB-202, ATCC CRL-1593.2, ATCC CCL-240, ATCC CCL-246, ATCC CRL-3622, Lonza CC-2541, BioIVT HUMANHLPB-0002393, Accegen ABC-H0034X, ATCC CCL-10, ATCC CCL-171, Invivogen, Riboxx, Sigma. • **Host(s), vector(s), and Donor Genes if used:** None • **Modifications (e.g., deletions, insertions, mutations to attenuate, or render replication incompetent) and note of any supporting documentation (published or unpublished data):** Designed to evaluate cultured human cells exposed to microbes and microbe-derived molecules to evaluate immune responses across epithelial and immune cells. • **Types of experimental manipulations that will be employed:** cell culturing and immune response challenging of cells. • **Proposed biosafety containment levels at which each operation will occur**: BSL-2	• **Additional pertinent information:** · The PI is proposing establish proof-of-principle that cellular expression profiles of pattern recognition receptors (PRRs; aka pathogen sensors) found on most cells can accurately classify infections using advanced AI/ML modeling. · All cell line work will be manipulated under the BSL-2 conditions inside a Class II Biosafety Cabinet with use of appropriate PPE and methods. This should protect any personnel who are working with these cell lines. This work which is proposed to be conducted at BSL-2. Preparation of viral stocks will be conducted under Biosafety Level 2 (BSL-2) containment using standard virological and aseptic practices. All procedures involving live virus or infected cells will be performed within a certified Class II biosafety cabinet to minimize aerosol generation. BHK-21 and MRC-5 cell monolayers will be infected at a defined multiplicity of infection and incubated until characteristic cytopathic effects (CPE) are observed. Bacterial culture will be performed under Biosafety Level 2 (BSL-2) conditions using standard microbiological practices and aseptic technique. All manipulations of live cultures will occur in a certified Class II biosafety cabinet to prevent aerosol generation. Mammalian cell culture and exposure studies involving live microbes and microbe-derived molecules will be performed under Biosafety Level 2 (BSL-2) conditions using sterile technique and standard cell culture practices. Immortalized epithelial and immune cell lines, as well as primary human-derived epithelial cells and PBMCs (including differentiated populations such as monocytes or macrophages) will be maintained ina sterile BSL2 environment. · Section III-D-1-a - the protocol uses commercial cell lines have been tested for well-known bloodborne pathogens, including HIV-1, HCV and HBV. Mammalian and Human cell lines could be potential carriers of poorly identified cancer-inducing viral pathogens. Therefore, these cells shall be handled as containing potentially infectious agents using universal precautions. All human cell lines are considered BSL-2 at LANL and are subject to the provisions of the BBP Standard.
NIH Guidelines Section	**III-D-1-a: Experiments involving the introduction of recombinant or synthetic nucleic acid molecules into Risk Group 2 agents will usually be conducted at Biosafety Level (BL) 2 containment.**	Cell types-- A549 (Human lung adenocarcinoma cells); BEAS-2B (Bronchial epithelial cells); THP-1 (Monocyte cell line); U937 (Monocytic cell line); HL-60 (Promyeloblast cells); KG-1 (Macrophages); SC monocytes (Monocytes); Normal human bronchial epithelial (NHBE) cells (Primary epithelial cells); Human peripheral blood mononuclear cells (PBMCs)(Primary white blood cells); Human alveolar macrophages (Primary lung macrophages); BHK-21 (Baby hamster kidney cells; fibroblasts); MRC-5 (Human diploid fibroblast cells cells are human or mammalian cells– will be used following standardized protocols.
Risk Assessment and Discussion	• Individuals will wear Standard PPE for BSL-2 labs: a disposable long-sleeved lab coat, safety glasses, and nitrile gloves. Two pairs of gloves (typically one layer of nitrile/neoprene and one layer of vinyl) are worn and disposable sleeves. Hand washing is required before leaving the BSL-2 lab. Staff will be trained in laboratory safety practices, including sharps safety. • No sharps will be used in the BSL-2 labs for any of the activities. • All handling of infectious agents and potentially contaminated materials, including exposure setup, sampling, and harvesting, will occur inside a certified Class II biosafety cabinet under BSL-2 conditions and PPE. • All culture waste, disposable materials, and contaminated liquids will be chemically disinfected (1:10 (vol:vol) diluted bleach solution, ≥30 min contact time) or autoclaved prior to disposal. Work surfaces and equipment will be disinfected before and after each session with a 1:10 diluted bleach solution, allowed to dry, and followed by 70% ethanol.	Pathogenicity: *S. aureus* can cause a wide variety of illnesses, including skin infections, pneumonia, and sepsis. It is estimated that S. aureus bacteremia has an incidence rate ranging from 20 to 50 cases/100,000 per year, and 10% to 30% of these patients will die from the infection; Route of transmission: Injection or ingestion; Environmental stability: Temperature growth range is 7-48oC. It is resistant to freezing and survives in food stored < -20oC.; Infectious dose: At least 100,000 organisms in humans [https://www.uta.edu/campusops/ehs/biological/docs/PSDS/STAPHYLOCOCCUS%20AUREUS.pdf]; Concentration/Total volume: Up to 50mL per culture; Availability of effective medical preventive or treatment options: Enrollment in the LANL human pathogen program, antibiotics. Pathogenicity: *S. typhimurium* is one of the most common causes of food-borne illness and is a cause of diarrheal diseases. Illness is more common in children, the elderly, or the immunocompromised.; Route of transmission: Ingestion; Environmental stability: It can survive in adverse conditions – from pH 4-8 and 8-45oC; Infectious dose: 10^3 organisms [https://pubmed.ncbi.nlm.nih.gov/6760337/]Concentration/Total volume: Up to 50mL per culture; Availability of effective medical preventive or treatment options: Enrollment in the LANL human pathogen program, antibiotics. Pathogenicity: MVA is severely host-restricted in mammals and is replication-deficient in human cells, making it very low risk for causing disease in healthy individuals. Route of transmission: Transmission would require direct skin contact, inoculation through broken skin or mucous membranes, or possibly aerosol exposure of fluids. Environmental stability: Known to resist environmental drying and can survive for many weeks outside a host. Infectious dose: No well-established human infectious dose for MVA as it is replication-deficient in humans. Concentration/Total volume: Up to 50mL per culture. Availability of effective medical preventive or treatment options: Exposure is reported immediately to Occupational Medicine. Prophylaxis will be determined by physician. Pathogenicity: HCoV-229E typically causes mild, self-limited upper respiratory tract infections (common cold) but can occasionally cause more severe lower respiratory disease (e.g., pneumonia) in infants, older adults or immunocompromised individuals.; Route of transmission: Spreads primarily via respiratory droplets (coughing, sneezing) and by touching contaminated surfaces (fomites) and then touching the nose, mouth or eyes.; Environmental stability: Viable on hard surfaces for hours to days (e.g., detectable for up to ~48 hours on stainless steel/plastic) under laboratory conditions,; Infectious dose: Unknown; estimated to be a few virus particles [https://journals.asm.org/doi/full/10.1128/mbio.01697-15]; Concentration/Total volume: Up to 50mL per culture; Availability of effective medical preventive or treatment options: Exposure is reported immediately to Occupational Medicine. Prophylaxis will be determined by physician. Management is generally supportive (rest, fluids, symptom relief). Pathogenicity: *C. albicans* is normally a commensal yeast on mucosal surfaces and skin but becomes an opportunistic pathogen when host immunity or barrier function is compromised, causing superficial infections (e.g., thrush, vaginitis) or life-threatening invasive disease (e.g., bloodstream infection) in vulnerable patients. Route of transmission: Most infections arise from endogenous colonizing flora but can happen through ingestion or inhalation of aerosols. Environmental stability: Can persist on surfaces in moist settings. Infectious dose: Unknown. Concentration/Total volume: Concentration varies as per vendor's instructions; up to 50mL cultures. Availability of effective medical preventive or treatment options: Exposure is reported immediately to Occupational Medicine. Prophylaxis will be determined by physician. Pathogenicity: The pathogenicity of mammalian cells relates to the potential for blood borne and other pathogens to be present. While all commercial human products are tested for the presence of pathogens, blood borne and other pathogens cannot be specifically ruled out or eliminated.

		Consequently, all blood products shall be handled as if containing potentially infectious agents using universal precautions. Route of transmission: The most likely route of inoculation for personnel handling mammalian cell products is dermal exposure or needle stick. Environmental stability: Stable for a few days at 4°C. Infectious dose: Unknown. Concentration/Total volume: Concentration varies as per vendor's instructions; up to 50mL cultures. Availability of effective medical preventive or treatment options: Exposure is reported immediately to Occupational Medicine. Prophylaxis will be determined by physician. Pathogenicity: The pathogenicity of human primary cells relates to the potential for blood borne and other pathogens to be present. While all commercial human products are tested for the presence of pathogens, blood borne and other pathogens cannot be specifically ruled out or eliminated. Consequently, all blood products shall be handled as if containing potentially infectious agents using universal precautions. Route of transmission: The most likely route of inoculation for personnel handling mammalian cell products is dermal exposure or needle stick. Environmental stability: Stable for a few days at 4°C. Infectious dose: Unknown. Concentration/Total volume: Concentration varies as per vendor's instructions; up to 50mL cultures. Availability of effective medical preventive or treatment options: Exposure is reported immediately to Occupational Medicine. Prophylaxis will be determined by physician.
Training	**Document completion of required institutional level training as well as detailed laboratory or protocol specific training.**	· Current LANL Biosafety Training · Current LANL BSL2 Profiency checklist on file · Current LANL Chemical Worker
Occupational Health Representative review (if applicable):	Note any: • Vaccination requirements • Respiratory protection • Periodic review of any medical surveillance • Post-exposure response procedures	Medical Surveillance enrollment in Biohazard Program and Human Pathogen Program. Exposure shall be reported immediately to Occupational Medicine and prophylaxis will be determined by physician.
Biosafety Level Assignment	• BSL2 labs for all cell line work will be manipulated inside a Class II Biosafety Cabinet with use of appropriate PPE and methods.	· Individuals will wear Standard PPE for BSL-2 labs: a disposable long-sleeved lab coat, safety glasses, gloves (specific for handling select toxins/chemicals per SDS). Two pairs of gloves (typical example- one layer of nitrile/neoprene and one layer of vinyl) are worn and disposable sleeves.
	• Hazardous Waste Requirements	· All RNA extraction waste may include lysed (i.e., dead / deactivated) cell and tissue remnants mixed with chaotropic salts (guanidine thiocyanate), reducing agents (β-mercaptoethanol, dithiothreitol), and ethanol that makes it incompatible with bleach. The RNA extraction waste is collected in waste stream #54646 "Nucleic acid extraction waste" as hazardous chemical waste.
IBC Vote	***Note:*** *If the IBC grants approvals based on specific conditions being met, there should be a formal mechanism for verifying the conditions are fulfilled (e.g., the BSO will conduct an inspection to verify all Biological Safety Cabinets are up to date on certification before work may commence, all training must be completed before lab staff may begin work etc.).*	**IBC Action: This proposal was moved to approve with condition** Votes:8 members - For · For/Against/Abstain: (8 For/ 0 Against/ 0 Abstain) · Conflict(s) of Interest: Jessica Kubicek is Shanker's Team lead and she recused herself
PI Name(s)	*Name (s) Erik Hanschen*	
Registration Number/Title	*New Registration 2025: IBC-202* *Fungal Bioremediation of Cyanotoxins*	Fungal Bioremediation of Cyanotoxins
Project Overview	• **Agent name:** Microcystis sp. (M. aeruginosa strain UTEX LB 2385, M. aeruginosa PCC 7806, M. aeruginosa CPCC 300) and Environmental samples from New Mexico lakes experiencing HABs. • **Agent Characteristics:** Microcystis sp.are cultures are commonly treated (and sold) as RG1/BSL1 strains. The NM lake environmental harmful algae blooms are unknown and treated as BSL2. • **Sources and nature of the nucleic acid sequences (e.g., species, structural transgene, oncogene, toxin):** LB2385 was obtained from the University of Texas (UTEX) culture collection. (https://utex.org/), PCC 7806 will be obtained from the Pasteur Cultures of Cyanobacteria (PCC), PCC 300 will be obtained from the Canadian Phycological Culture Centre (CPCC) (https://uwaterloo.ca/canadian-phycological-culture-centre), and samples from ecological sources in New Mexico. • **Host(s), vector(s), and Donor Genes if used:** None • **Modifications (e.g., deletions, insertions, mutations to attenuate, or render replication incompetent) and note of any supporting documentation (published or unpublished data):** Not applicable. • **Types of experimental manipulations that will be employed:** cell culturing • **Proposed biosafety containment levels at which each operation will occur**: BSL-2	• **Additional pertinent information:** · The PI is proposing to quantify microcystin toxins. · All cell line work will be manipulated under the BSL-2 conditions inside a Class II Biosafety Cabinet with use of appropriate PPE and methods. This should protect any personnel who are working with these cell lines. This work which is proposed to be conducted at BSL-2. In co-culture experiments, fungal cultures isolated from soil samples from a local area in New Mexico affected by HABs will be screened for their ability to remove varying quantities of M. aeruginosa or the isolated microcystin toxin from cultures in either liquid or solid (agar) mediums. · Section III-D-1-a - the protocol uses well studied bacterial cell lines have been tested for pathogens. Environmental bacterial cell lines could be potential carriers of poorly identified pathogens. Therefore, these cells shall be handled as containing potentially infectious agents using universal precautions.
NIH Guidelines Section	**III-D-1-a: Experiments involving the introduction of recombinant or synthetic nucleic acid molecules into Risk Group 2 agents will usually be conducted at Biosafety Level (BL) 2 containment.**	HAB Environmental cells – will be used following standardized protocols.
	• Individuals will wear Standard PPE for BSL-2 labs: a disposable long-sleeved lab coat, safety glasses, and nitrile gloves. Two pairs of gloves (typically one layer of nitrile/neoprene and one layer of vinyl) are worn and disposable sleeves. Hand washing is required before leaving the BSL-2 lab. Staff will be trained in laboratory safety practices, including sharps safety. • No sharps will be used in the BSL-2 labs for any of the activities.	Pathogenicity: There is no known risk of propagating bacterial or fungal pathogens in cyanobacterial HAB cultures to humans. However, the HAB does produce a toxin, Microcystin-LR (toxin produced by HAB species Microcystis aeruginosa), that is harmful to humans. Route of transmission: Inhalation (airborne transmission), direct physical contact, ingestion (most dangerous) Environmental stability: Microcystin toxins are nonvolatile, hydrophilic, stable in sunlight, and over a wide temperature and pH range. Infectious dose: LD50 = 50 µg/kg (mouse i.p.) for microcystin – lower relative toxicity than other

Risk Assessment and Discussion	• Filter papers containing fungal biomass and remnants of Microcystis, fungi, and microcystins will be placed in a 10% v/v bleach solution for at least 30 minutes, then stored and autoclaved with other BSL-2 materials following measurements. In regards of fungal spore production, aerosolization of asexual spores will be prevented by culturing fungi in liquid media. When plating is necessary, plates will be sealed with parafilm and opened within the BSC to prevent exposure. Due to the restriction of working with RG-1 fungi only within this space, and RG-1 being defined as organisms that are not known to consistently cause disease in healthy adults (https://www.cdc.gov/training/quicklearns/biosafety/), transmission and exposure is of pathogenic fungi and their spores is eliminated, and these methods mentioned above are used out of an abundance of caution. The standard decontamination procedures for working with Microcystis cultures will consist of 10% bleach treatment (The minimal effective concentration of was dependent on toxin and contact time; microcystins can be inactivated at least 99% by treatment with 2.5% bleach for 30 minutes, or with a combination of 0.25% NaOCl and 0.25N NaOH; https://www.unr.edu/ehs/policies-manuals/biosafety-manual/chapter-7). We will follow the standard treatment of 10% bleach for 30 minutes for bleach decontamination. This process will be done to sterilize surfaces, plastic and glass consumables and liquid residues (i.e. spent cultures/biomass residues). All work involving the handling of toxins will be performed in a Class II Type B1 Biological Safety Cabinet. To minimize potential generation of aerosols while handling cyanobacterial HAB cultures, we will use aerosol-barrier tips when pipetting, utilize flasks with filter-vented lids, and perform work using steady and controlled motions. Per the Microcystin SDS datasheet, disposable respirators will be used according to the recommendations of the hazard analysis in the IWD. Secondary retention (swinging buckets with lids) will be used in centrifuges to contain aerosols and potential spills. We will follow the guidelines in the OSH-ISH Biosafety manual for biocontainment of spills, including the use of bleach and covering the spill will paper towels to reduce aerosols. Following work, the BSC and work surfaces will be cleaned by 10% bleach solution. • Cells will be cultured in disposable sterile flasks using disposable filtered pipettes for all manipulations to protect against aerosols.	HAB toxins. Reference: Microcystin SDS (attached) WHO guideline: 1 ug/L allowable in drinking water Concentration/Total volume: Max will be 10 ug/ml (500 ug/50mL total) – more than allowable in drinking water Availability of effective medical preventative or treatment options: Supportive care (i.e., IVF and electrolyte replacement) for GI symptoms. N-acetylcysteine (NAC) has shown promise in vitro (Xue et al, 2015) and has been used in dogs (Foss et al, 2019). PO Cholestyramine and silibinin have shown promise in dogs (Rankin et al, 2013; Lakshmana Rao et al, 2004; Wahsha 2009). Early Symptoms: visual disturbances, N/V/D (nausea, vomiting, and diarrhea), abdominal pain, muscle weakness Late Symptoms: liver failure, death (as observed in human poisoning event when 131 patients were exposed via hemodialysis) (Turner et al., 1990; Li et al, 2011) Animal Studies: Hepatotoxicity (Nonalcoholic fatty liver disease (NAFLD)) Neurotoxicity (Wang 2019) Sea otters (Miller et al, 2010) Murine models (Sarkar et al, 2019; Lad et al, 2019; He et al, 2018; He et al, 2017) Ovotoxicity (Qiao et al, 2019; Shuo Xiao, 2019; Xue et al, 2015)) Coagulopathy and thrombocytopenia (Foss et al, 2019; Rankin et al, 2013)
Training	**Document completion of required institutional level training as well as detailed laboratory or protocol specific training.**	· Current LANL Biosafety Training · Current LANL BSL2 Profiency checklist on file · Current LANL Chemical Worker
Occupational Health Representative review (if applicable):	Note any: • Vaccination requirements • Respiratory protection • Periodic review of any medical surveillance • Post-exposure response procedures	Medical Surveillance enrollment in Biohazard Program and Human Pathogen Program. Exposure shall be reported immediately to Occupational Medicine and prophylaxis will be determined by physician.
Biosafety Level Assignment	• BSL2 labs for all cell line work will be manipulated inside a Class II Biosafety Cabinet with use of appropriate PPE and methods.	· Individuals will wear Standard PPE for BSL-2 labs: a disposable long-sleeved lab coat, safety glasses, gloves (specific for handling select toxins/chemicals per SDS). Two pairs of gloves (typical example- one layer of nitrile/neoprene and one layer of vinyl) are worn and disposable sleeves.
	• Mixed Waste Requirements	· All waste materials removed from the biosafety cabinet will be reacted to completion with 10% bleach solution and solidified with waste. These include used laboratory plasticware and gloves contaminated with bacterial cells, and culture media, including select toxin specific waste. Biological waste such as pipette tips or tubes in the BSC will be placed in a smaller autoclavable bag within a secondary container with lid. When ready to dispose, the bag will be placed into the BSL-2 cardboard box. The box will then be then placed into the autoclave and autoclaved for 60 minutes with a spore ampule product such as "Bt sure" included during the cycle. All waste will be disposed of following guidelines outlined in OSH-ISH-FSD-BM-009. The work described in this IBC proposal follows all regulations in the following documents: 1) Biosafety Manual – Chapter 3 – BSAT Work Safety Plan, Security Plan, and Incident Response Plan 2) Validation and Inactivation Procedures of Biological Select Agents and Toxins 3) Biosafety in Microbiological and Biomedical Laboratories (BMBL)
IBC Vote	***Note:*** *If the IBC grants approvals based on specific conditions being met, there should be a formal mechanism for verifying the conditions are fulfilled (e.g., the BSO will conduct an inspection to verify all Biological Safety Cabinets are up to date on certification before work may commence, all training must be completed before lab staff may begin work etc.).*	**IBC Action:** This proposal was moved to approve with condition Votes: 9 members - For · For/Against/Abstain: (9 For/ 0 Against/ 0 Abstain) · Conflict(s) of Interest: None.
New Business/ Additional Topics		The approved IBC Meeting Minutes from September 4, 2025 is currently being reviewed by the LANL Classification Office. Occupational Medicine is deciding on the future of medical surveillance for human pathogens. They are looking at the BMBL organisms and they will keep the samples dependent on high risk exposures. Select toxins will not be under surveillance. A future meeting in January will communicate the changes in surveillance.
Review of Incidents	*The NIH Guidelines require that significant incidents, violations and research-related accidents and illnesses be reported to NIH OSP.* *For information regarding incident reporting requirements please refer to the Incident Reporting FAQs.*	No Incidents were reported.
Inspections/ Ongoing Oversight	*For IBC-199 met Inspections for the lab granted approval.*	
Public Comments	There were no public comments.	
Adjournment		**IBC Action:** Moved to Adjourn 11:06 AM Votes: 9 members - For · For/Against/Abstain: (9 For/ 0 Against/ 0 Abstain) · The next meeting scheduled is for March 5th, 2026 from 8:30 am to 11:30 am in person and via Teams/WebEx.