ABSA INTERNATIONAL
The Association for Biosafety and Biosecurity
1200 Allanson Road • Mundelein, IL 60060-3808 • 866-425-1385 • info@absa.org • www.absa.org

Core Purpose:
ABSA International is dedicated to promoting and expanding biosafety and biosecurity expertise.

Core Organizational Values:
Community, discipline, integrity, excellence.

To: National Institutes of Health, Office of Science Policy

RE: ABSA International's Response to the NIH Biosafety Policy Modernization Initiative

Date: March 16, 2026

Dear Sir/Madam,

ABSA International (American Biological Safety Association International) appreciates the opportunity to engage with the National Institutes of Health (NIH) regarding the NIH's Biosafety Policy Modernization Initiative.

ABSA International represents biosafety and biosecurity professionals across academic institutions, government laboratories, biotechnology companies, healthcare organizations, and public health agencies. Our members include biosafety officers, Institutional Biosafety Committee (IBC) members, laboratory safety professionals, researchers, veterinarians and animal care professionals, and regulatory specialists responsible for implementing and overseeing biosafety and biosecurity programs that support safe and responsible research involving biological materials.

As the leading professional association for biosafety and biosecurity practitioners, ABSA International is committed to advancing policies and practices that protect laboratory personnel, the public, agriculture, and the environment while enabling scientific innovation and responsible research.

ABSA International's Technical, Regulatory, and Legislative Review (TRLR) Committee conducted surveys in 2025 and 2026. These surveys sought feedback from biorisk professionals regarding potential updates to NIH biosafety policy, including the appropriate scope of oversight, ideas to improve biosafety review processes, and opportunities for streamlining oversight for well-characterized low-risk research.

On behalf of ABSA International, we respectfully submit our recommendations related to the NIH's Biosafety Modernization Initiative. These recommendations reflect the experiences and observations of the professionals directly involved in implementing biosafety policies and managing biosafety oversight at institutions across the United States and internationally.

ABSA International–Supported Recommendations

Scope: ABSA International fully supports a shift from a primarily molecule/technique-triggered rule set to a risk-based framework that addresses both known and novel, engineered hazards.

- Develop a tiered, risk- and capability-based oversight system that reduces administrative burden for well-characterized low-risk research while preserving robust review for higher-risk research. See Appendix 1 for specific suggestions.
- Retain the current Risk Group (RG) categorization system. Risk groups are understood and utilized globally as one element considered during the risk assessment process.
- Expand the scope of biosafety policy beyond recombinant and synthetic nucleic acids to include wild-type RG2 and higher agents, biotoxins, and other biological materials where oversight gaps may exist.
- Develop a unified framework for biological risk assessment that operates regardless of funding source.
- Ensure OSP reportable event criteria is based on risk. Reporting minimal-risk exposure to nonpathogenic agents or nonhazardous transgenes is burdensome and may not add value at the OSP level and can still be addressed at the institutional level.
- Consider opportunities for coordination / integration with stakeholders to harmonize requirements, reduce duplication of effort, and increase efficiency.
    - NOTE: ABSA International encourages NIH OSP to embrace this opportunity to modernize the U.S. biosafety and biosecurity oversight landscape by reducing duplicative or inconsistent requirements, improving interagency coordination, and consolidating policies, regulations, and supporting systems where appropriate. These steps can enable a unified, risk-based approach that strengthens safety, security, and compliance while minimizing unnecessary administrative burden. We recommend a careful assessment of how the proposed NIH Biosafety Policy would interact with existing regulations, policies, and best professional practices, including where it may duplicate, conflict with, or otherwise create inconsistencies with current requirements. Additionally, we encourage consideration of One Health principles, as a modern biosafety policy must reflect the global research, medical, and manufacturing landscape. Alignment, where possible, will position the U.S. as a partner in global biorisk management.

Implementation: ABSA International fully supports empowering and professionalizing Institutional Biosafety Committees (IBCs), IBC administrators, and the career path of biosafety professionals.

- Clearly delineate NIH OSP expectations for compliance versus local oversight.
- Clearly define the requirements, roles, and responsibilities for an “Institutional Official (IO)”, if applicable, as it applies to biosafety policy and IBC oversight.

- Establish clear authority, standards, and expectations for support and funding of biosafety oversight comparable to other institutional compliance committees [ex., Institutional Review Boards (IRBs), Institutional Animal Care and Use Committees (IACUCs)].
- Clearly define the requirements, roles, and responsibilities of a "Biosafety Officer (BSO)", where applicable, as they relate to biosafety policy implementation and IBC oversight.
    - NOTE: ABSA International strongly discourages any policy stance that requires advanced degrees or credentials as a condition for designation as a BSO. While ABSA International strongly supports education and credentialing to recognize experience and standardize expertise across the profession, such requirements would create unnecessary barriers to entry. Credentials are often unavailable until mid-career due to time-in-grade requirements, may be financially unattainable, and may be unnecessary for less complex programs or entities where BSO responsibilities represent only a portion of an individual's job duties. Entities should be able to base the requirements for their BSO on research portfolios, institutional needs, and local conditions.
- Ensure the composition of an IBC reflects an entity's scope and complexity with regards to subject matter expertise and support staff, as appropriate (ex. occupational medicine, legal experts, technical staff, research animal care and use, physical security, etc.).
- Support local oversight of community member appointments; current maximum physical distance from entity requirements and perceived conflicts of interest at an OSP level limit the pool of eligible and willing candidates.
- Promote transparency, incident-based learning, and sharing of biosafety knowledge infrastructure to improve consistency, institutional learning, and public confidence in biosafety oversight.
- Adopt policy implementation timeframes that are realistic, achievable, and based on available resources and funding, commensurate with the scope of any major policy overhaul.
- Issue comprehensive implementation guidance and provide accessible, ongoing training in advance of any effective date to support consistent implementation.

Policy Oversight and Management: ABSA International supports policies that adapt to evolving domestic and global conditions.

- Include mechanisms for timely policy review and adaptation in response to emerging pathogens, advances in biological/biomedical research, and contemporary biotechnology applications.
- Establish clear communication protocols, including designated points of contact and timelines, for interactions between NIH OSP and impacted entities.
- Ensure timely review and approval of IBC rosters, if still required.
- Develop a process for timely review, response, and approval/denial related to any requirements for higher-level oversight.

- Encourage feedback from impacted entities and establish ongoing, two-way communication channels to address implementation and compliance challenges.

ABSA International believes that the considerations and recommendations outlined in this document will strengthen the effectiveness of biosafety oversight while ensuring regulatory frameworks remain aligned with the rapidly evolving landscape of modern biological research. A biosafety policy that is risk-informed, proportionate, and clearly articulated will enable institutions' implementation of biosafety practices, enhance institutional accountability, and allow biosafety professionals and IBCs to focus their expertise on research activities that present the greatest potential risk.

As this statement provides association-level recommendations, we are also providing a deidentified summary of the individual survey responses (Appendix 2).

ABSA International stands ready to provide additional expertise or clarification as NIH OSP continues its efforts to modernize biosafety policy. We look forward to continued engagement with NIH and other federal partners to advance biosafety policies that promote both safety and scientific progress.

Sincerely,

Anne Sophie Brocard

Anne-Sophie Brocard, PhD, RBP(ABSA), CBSP(ABSA)
President, ABSA International

Appendix 1: Recommendations for Exemptions and Tiered Oversight

ABSA International supports expanding exemptions and delegated review for research that can be safely conducted at BSL-1/ABSL-1 under established institutional policies (with clear carve-outs for toxic/harmful products or other risk-enhancing factors). Examples frequently cited for reduced review burden include routine plasmid-based (non-viral) work, common RG1 organisms (*E. coli* BL21), and certain transgenic/model organism work conducted safely at ABSL-1.
ABSA International recommends a tiered model of oversight, with the following broad examples:
Tier 1 – Low risk: registration only/exempt or BSO/IBC designee review; standard baseline requirements (e.g., defined decontamination processes, proper waste disposal, appropriate PPE) still apply. Examples include:

- low risk cloning of reporter genes into bacterial, viral and/ or fungal hosts,
- work with human materials where OSHA Bolodborne Pathogens are the only concern (ex., well-characterized human cell lines, human tissues, etc.), and
- addition of new strains to existing registrations that do not affect the risk profile.

Tier 2 — Moderate risk: expedited/delegated review [e.g., Designated Member Review (DMR)]; the IBC charter would define entity-specific criteria for inclusion in the DMR process, so the process reflects the professional expertise of the BSO and designated IBC members and the entity's research portfolio. Applicable examples include:

- well-characterized manipulation of RG2 materials,
- administration of infectious materials to animals at ABSL-2,
- use of exempt quantities of Biological Select Toxin,
- standard human use protocols (ex. CAR-T cell protocol); and
- use of contemporary pathogens in screens for novel medical compounds or –omics studies.

Tier 3 — Higher risk: full IBC review, including additional oversight as required by any related federal policy or regulation. Examples include:

- RG2 agents or procedures not commonly reviewed by the entity,
- work with RG3 and RG4 agents,
- work with Biological Select Agents and Toxins (BSAT),
- novel or complex procedures (ex., aerobiology experiments with RG2 or higher, gene drives or field release of genetically modified materials), and
- research involving multi-drug-resistant organisms.

Appendix 2: Deidentified Summary of ABSA International Survey Results

- Clearly defined and easily interpretable requirements and guidelines. Improving flexibility and scalability - policies that can adapt to emerging technologies. Allow for tiered oversight based on risk level, containment capabilities, and setting. Empower IBCs so that they are viewed in the same manner as IACUC and IRB. Number of Likes 6

- Provides more resources to IBCs. Centralizes biosecurity matters within the government into one office. Number of Likes 2

- One thing that struck me is that with *very* few exceptions, biosafety professionals were speaking on behalf of themselves and not their institutions, departments, or IBCs. The lack of institutional leadership engagement with this process highlights the need to give biosafety officers and IBCs greater authority to set and enforce biosafety and biosecurity policies and procedures.

- With staffing issues currently, I do not think anything should be off the table.

- Published papers- have the biosafety containment and aspects listed (containment level, controls, IBC approval.

- Consider adopting SOP to enforce reporting of laboratory and occupational incidents so that training or changes to lab SOPs can be implemented. No need to create legislation like in Canada's system but need to confirm whether incidents are under reported at different institutions.

- Provide a risk assessment approach for new vector systems that are not named in the guidelines. Coordinate the compliance with the grants review process so PIs are informed of their roles and responsibilities earlier in the application process and not when the agreements are about to be executed. Give the IBC the same status as to IACUC and IRB. Number of Likes 4

- The biosafety community is kept in the dark when it comes to USDA and CDC permitting and inspection and compliance. We need to have a seat at the table so we can perform our jobs in not only protecting the researchers in the labs and the people in our community but we also need to be able to perform our jobs to protect the environment/ ecosystems (and therefore our communities) as well. We need to be included in these processes and right now, we are not. If we had the FTE, resources and connections, we would be able to perform proper risk assessments and implement the policies that are being implemented, but again, we need a sit at the table and need to be informed by the designated agencies. We need a cohesive collaborative effort from not just NIH, but all of the agencies associated with biological materials and biotechnologies, human, animal, arthropod, agricultural. We need better collaboration between the regulatory agencies so we can do what we do best. Number of Likes 2

- Consider information related to risk assessment and containment practices be included when research funded by NIH is published (could be in the supplemental materials). This could promote thoughtful documentation of the process and controls used, consistency, transparency, collection/comparison of approaches to risk reduction, and enhance trust. Number of Likes 2

- Having living, on-line databases regarding risks of biological agents, such as seen with the Public Health Agency of Canada, would be highly beneficial for standardizing biosafety risk assessments. Number of Likes 5

- Should we take a look at the risk group classifications since they are very humancentric and reimagine risk groups with a one health approach? Number of Likes 1

- Expanded access programs of approved gene therapies of off spec products. If the product a gene therapy is off spec and being given as part of an expanded access program that is not an individual one IBC approval is still needed. This adds additional barriers to provided a therapy that may help a patient. Number of Likes1

- Formal education regarding how the NIH Guidelines should be applied to research. Over the course of these decades there has been a decline in comprehension in how the Guidelines were meant to be implemented. I'm so old Risk Groups DO NOT equal Biosafety Level and now they're interchangeable... Way back when Risk Groups were used to identify the riskiness of recombination in a genetically modified agent, hence why more viruses were RG3 back in the day, we understood them less. Number of Likes 2

- NIH should develop or authorize a standardized online classification module or flowchart. Instead of institutions "self-assigning" risk levels, researchers would input the agent's properties (e.g., nuclease type, mutation rate, aerosol potential), and the system would output a mandatory minimum Biosafety Level. This removes the "negotiation" between scientists and management over safety levels, creating a uniform national standard that can't be lowered to save on production costs. Comprehensive biological inventories and Electronic Lab Notebook (ELN) tracking must be mandatory and subject to federal "spot-check" digital audits. Paper trails can be manipulated. An internal "live" digital inventory makes it significantly harder to hide the presence of high-risk "mystery agents" or un-inventoried viral supernatants. When a BSO flags a safety gap, the institution must be legally barred from self-validating the facility as "safe." Resuming production after a major safety breach (like a failed fire alarm or a viral release) must require external regulatory sign-off, preventing management from simply overriding their own safety officer. Training for lead safety roles (BSOs, IBC members, and Emergency Response Coordinators) must be conducted by an authorized third-party organization (like ABSA or a federal agency). Safety leadership roles cannot be "volunteered" or added to an existing employee's workload as a secondary task. These must be dedicated, credentialed positions (e.g., HAZWOPER or RBP/CBSP) to prevent the appointment of unqualified staff. Number of Likes 1

- Standardization = standardization of governance which really means "who's in charge and who does it apply to? Standardization of training. Standardization of IBC registration forms. Standardization of Risk Assessments. Standardization of "cradle to grave" or in this case "the minute it comes into a lab until it leaves the lab" processes for biological materials. Many resources give a "How To" or Best Practices based on a specific setting or methodology. I'd like to see a resource that addresses the entire process from start to finish such as permit requirements, MTA's, training recommendations, containment recommendations, compliance recommendations, waste management, exposure control and decon. Consolidation= consolidation of biosafety "lead" such that even if it falls under multiple agencies (USDA, CDC, NIH,...) who in turn have their own processes in place, can we please have a single entity that coordinates with all of them so that there overlap and redundancy are reduced on the end user? Consolidation can also allow for dynamic screening and move towards phased modernization to allow for real time updates to testing and oversight to keep pace with advances in biotech industry. Empowerment= give local IBCs the same leverage and reviewing capabilities as IACUC and IRB. By empowering IBCs you're giving them "teeth" to push forward and

implement biosafety processes and oversight of research that may have been lacking in the past. Empowered IBCs may be able to reduce "red tape" for low-risk research, enhance local accountability, close oversight gaps with IACUC and IBC and help modernize institutional support systems based on standardized biosafety/biosecurity criteria defined by the new policy. With that being said, Institutional IBC must actually have the SMEs to understand and evaluate submissions. The last thing anyone wants is some admin with absolutely zero lab experience, zero liability, and zero skin in the game rubber stamping IBC approvals with no external oversight or vetting. Number of Likes 2

- If the NIH is to strengthen biosafety oversight through a move to a more risk-based approach, then the Science article by Kojima, K.et al. (Science 360: pp260-262, 2018) may perhaps offer a good description of such an approach. Although written to promote the globalization of biosafety, the use of a risk- (a multifactorial assessment, including infectious dose of the agent, knowledge of and experience with the agent by the lab members, biosecurity, etc.) and evidence- (core requirements regarding containment and laboratory procedures that are proportionate to the risks presented by the agent) based approach, rather than the use of a BSL checklist, would provide a flexible and tailored means of ensuring biosafety in the laboratory. Number of Likes 3

- The use of risk groups as "one input and not the backbone" for a risk assessment, providing an interactive database of NIH reviewed research that is shown to be safe and can be adopted by other institutions (reduces the administrative burden for institutions and the NIH to ask for the same approval already provided numerous time), and affording institutions - within the framework of their IBC - to determine containment level for the use of genetically modified organisms or animals that are shown to be of low-risk to researchers, the environment and community by a preponderance of evidence (maintained under the purview of the IBC for research accountability and transparency). Number of Likes 1

- An integrated biosafety policy that is risk based and focuses on things with actual risk. Human and animal pathogens, toxins at low levels that lead to a high ld50/lc50 (levels up for discussion), oncogenes/tumor suppressors integrating viral vectors, gene drive modified organisms that can have a serious societal impact, handling/disinfection of lab biological waste (harmonize with or defer to BMBL), biosafety containment levels (harmonize with or defer to BMBL).Allow IBC's or equivalent committees flexibility to set institutional guidelines/requirements for lower risk items. Where there will be overlap amongst other regulatory entities (Select Agent Programs, USDA, CDC, DOT/IATA) - be clear what are additional requirements and reference/defer to existing entities that already have expertise or requirements in place. Number of Likes 3

- Pharmaceutical companies and biosafety consultant companies should be made aware and brought into this discussion.

- Rather than having the NIH provide oversight, NIH should build biosafety and biosecurity into the grant review process and make it part of peer review. Number of Likes 4

- The NIH should take a closer look at incorporating safety inspections into its policies on grant awards as well as how it validates institutional oversight and the effectiveness of each registered IBC. There are *wildly* different interpretations of laboratory safety that vary across states, public/private institutions, clinical/industry/academic, etc. Institutions could all be working

(theoretically) with the same agents in the same risk group, and those of them with more lax standards or a history of lapses in good safety practices are at a much higher risk of having adverse outcomes in NIH-funded research. Institutional commitment to good safety practice is a gap in oversight. The NIH should be taking a closer look at institutional safety practices and awardees' response to safety lapses by linking this directly to how it issues awards. This provides an incentive for institutions falling short on safety standards to change if they want to remain competitive. Number of Likes 9

    - Public confidence is also part of this. Public trust in science is bolstered by including commitment to safety in NIH-funding. Labs with poor safety practices should not be trusted produce reliable/reproducible data. This is a wasteful use of NIH-funding.

- I know this is probably absolute left field thinking and I'm just trying to think outside the box since we have a rare opportunity to try to forge a new process out of the remnants of a slowly deteriorating system. I personally would like to see a policy that takes a pro-active approach to biosafety oversight and compliance instead of a re-active scramble every time there is an update or change to the policy. This might hit some institutional admins in the feels, but we're talking about evaluating front end policy modifications that starts at the research FUNDING process level rather than focused solely on the "point of use" stakeholders on the back end. Or maybe it should be called the research funding ACCEPTANCE vetting when institutions are awarded funding? I feel that by implementing a front-loaded vetting approach, resources can be allocated/directed at the onset thereby distributing the onus of biosafety/biosecurity validation, correlation/compilation/documentation of comprehensive risk assessment(s), and cohesive research compliance (IBC/IACUC/IRB) to the front end of the granting process, rather than constantly playing catchup by biosafety professionals outside the circle of trust but responsible for ensuring that all biosafety compliance is adhered to and followed. To put it bluntly, shift responsibility and liability to those cashing the checks before verifying that all the boxes have been checked. My sincere hope is that by implementing an early focus approach to biosafety/biosecurity, there is less siloing of both liability and responsibility, greater communication among institutional stakeholders and a top-down ownership of institutional biosafety/biosecurity rather than a bottom up exercise in multi-tasking gymnastics. Number of Likes 9

- The scope should begin at grant submission. The grant application should include a section regarding biosafety/biosecurity similar to sections on human subjects and vertebrate animals. Consideration for funding should include the risk of the research and the capacity of the institution to provide adequate oversight by way of an established biosafety program. Awarded grants should require documentation related to biosafety, again similar to HSR and vertebrate animals. The scope should begin at grant submission. The grant application should include a section regarding biosafety/biosecurity similar to sections on human subjects and vertebrate animals. Consideration for funding should include the risk of the research and the capacity of the institution to provide adequate oversight by way of an established biosafety program. Awarded grants should require documentation related to biosafety, again similar to hsr and vertebrate animals. Number of Likes 6

- Currently, the legitimacy of any federal policies and the rationale behind them (including NIH) is in question. The scope of HHS oversight in general will need to be reevaluated as I foresee

weaponization of biosafety policies to discredit science in favor of snake oil under the facade of "risk". We should lean more heavily on collaborative organizations and local/international guidelines and actively question policies/guidelines.

- This is a tough question as the most effective federal biosafety policy would not reside within the scope of a funding institution. Number of Likes 5

- Given that NIH is a funding agency without regulatory authority, it seems appropriate for oversight to be transitioned away from NIH and to agencies with regulatory authority (i.e.CDC, USDA, FDA). Current oversight of recombinant/synthetic nucleic acids is limited to those entities that receive NIH funding, which leaves large swaths of research without proper oversight. Number of Likes 9

- It will be great to take advantage of AI while taking steps to Modernize NIH Biosafety & Biosecurity policy and what can be done to include it in the curriculum. It will allow to reflect on gaps in the present scenario and how we can update in very futuristic way aligning with advances in biotechnologies.

- As NIH has focused more on human health, should NIH drop oversight of plant science from the new policy?

- The NIH Biosafety Policy scope should limit oversight for research already overseen by USDA, FDA, CDC etc. It should expand oversight for current gaps in safety guidance including documentation of LAIs, and oversight/guidance for antimicrobial resistant organisms. It should be informed by past safety events and should be focused on preventing safety incidents as opposed to reacting to them. It should be consistent with current guidance and should try to integrate formalized risk assessments into biosafety oversight. Number of Likes 1

- NIH should avoid regulatory scope creep. A single person does not determine the Biosafety Level of an Agent if it is unpublished. The NIH can publish Risk Groups, the Biosafety Level is determined by Institution based on risk assessment. Number of Likes 5

- Like WHO, get rid of Risk Group classification OR broaden it to more than just human pathogens. Focus on risk assessment for ALL pathogens- plant, animal, insect, not just human pathogens in the biosafety policy. We are part of an ecosystem. We can't silo. Number of Likes 1

- While some have suggested that NIH should not influence review of research overseen by other federal agencies such as USDA, CDC, or FDA, my primary concern is the process used for the overall assessment and management of research risk. Reporting of issues or the requirement for higher-level approval for higher-risk work may appropriately reside with the funding agency; however, the underlying risk assessment framework must be consistent. There should be a unified mechanism that ensures risk assessment, approval, and compliance criteria are applied consistently both at the funding level and at the institutional level. Conceptually, this could be envisioned as a structure in which the various funding and oversight agencies feed into a centralized “Risk Assessment and Management; Compliance Criteria” function. From that

centralized framework would flow clear, uniform guidance to the institutions conducting the work. Under such a model, the specific funding or oversight agency—or even the presence of multiple agencies on a single project—would not alter how risk is evaluated, approved, or monitored for compliance. The assessment process, approval thresholds, and compliance expectations would be standardized, promoting clarity, consistency, and confidence across the research enterprise. Number of Likes 2

- The scope of NIH's biosafety policy should encompass not only recombinant/synthetic nucleic acids (as is the case already), but the tools used to manipulate nucleic acids (e.g., CRSPR-Cas, Talens, base editors) and the vehicles to deliver those tools (e.g., lipid nanoparticles, viral vectors, DNA origami). Future developments that lead to new methods of genome engineering and of nucleic acid transfer among different organisms should also be incorporated smoothly into an updated policy. A closer alignment with the BMBL 6th edition would be beneficial, particularly in incorporating additional information regarding fungi, parasitic, and viral agents. And BMBL Appendix H, concerned with risk assessment when working with human and non-human primate tissues and cells, is important to include in the policy given the increased research with organoids, assembloids, and tissues-on-chips. Number of Likes 2

- Agents and processes that are not industry standard and carry significant risk. And no matter what the decided scope is in the end I think that the most important thing to allow us to ensure compliance is that the policy is much clearer in identifying what is and what is NOT included in the scope. I think that that that is actually hard to determine with the current guidelines and ends up creating more burden because many IBCs review much more then than need be even now. Agents and processes that are not industry standard and carry significant risk. And no matter what the decided scope is in the end I think that the most important thing to allow us to ensure compliance is that the policy is much clearer in identifying what is and what is not included in the scope. I think that that that is actually hard to determine with the current guidelines and ends up creating more burden because many IBCs review much more then than need be even now. Number of Likes 1

- Failing to include other agencies such as CDC and USDA in the scope of a biosafety policy is not modernizing biosafety. A piecemeal approach of agencies overseeing only certain aspects of research with biological materials (pathogens, infectious materials, and genetically modified organisms) misses the opportunity to provide truly meaningful solutions and assurance to the public that protection of people, plants, animals and the environment are essential. A One Health mindset is needed. A policy must include wild type agents and a framework for assessing risk of research with biological materials, regardless of funding source. Low risk work (that which can be performed at BSL1) should not be left out of the policy and institutional oversight; empower institutions to continue to review and oversee this work. I agree with previous statements regarding USDA and CDC permitting and inspection. Institutions are often not included in this process, this check and balance of the work and materials is missed. Number of Likes 3

- The modernization of the NIH biosafety policy must move decisively away from a static, list-based model toward a risk-based, performance-driven framework that aligns oversight with the true hazard, intent, and complexity of the research. This framework should be independent of political influence and codified in federal regulation so that biosafety standards cannot shift with

changes in administration or funding priorities. In the context of biosafety policy, a performance-driven framework would mean:- Outcome-based expectations: Institutions must demonstrate that controls work—for example, that containment integrity, training effectiveness, and incident response actually reduce measurable risk—rather than simply showing that a policy exists on paper.- Defined performance metrics: Oversight focuses on quantifiable indicators such as incident trends, audit results, corrective-action closure rates, and culture-of-safety maturity.- Flexibility in implementation: Institutions can tailor how they meet the standards, as long as they achieve the required safety and security outcomes for their risk tier.- Continuous improvement: Performance data drive iterative improvement, not just compliance for its own sake. Essentially, it replaces "Did you follow the checklist?" with "Can you demonstrate that your system effectively prevents harm to people, animals, and the environment?" A credible system must establish clear, enforceable consequences for both individuals and institutions that display willful noncompliance. Institutional accountability is essential—when organizations knowingly neglect biosafety obligations or under-resource their compliance programs, there must be tangible repercussions, including potential loss of federal eligibility, fines, or suspension of research operations. Importantly, these standards should apply universally, not only to NIH-funded or grant-funded entities. Oversight should extend across the entire research ecosystem—academic, private, and government—because the goal is not simply regulatory compliance, but the protection of people, animals, and the environment. This is a One Health issue: biological risk does not recognize institutional boundaries or funding sources. Finally, any modernization effort must bridge the fragmented oversight landscape. NIH, CDC, USDA, DoD, and other agencies must converge on a unified, risk-based biosafety framework that defines consistent expectations, standardized risk tiers, and a common lexicon. Only through such integration can we achieve durable, transparent, and science-aligned biosafety governance that earns both public trust and practitioner respect. Number of Likes 6

- The concept of risk groups should be updated to reflect the pathogenic potential be not just in humans, but in the natural host species. Risk groups should also consider potential for cross-species transmission. This will allow for better environmental based risk assessment and allow for better oversight of research with the potential for negative environmental impacts as well as human health. Number of Likes 3
    - Agreed - shifting to a One Health-style approach should be supported. Number of Likes 4
    - Second this. One of our virologists has been advocating for more rigorous oversight of screening and amplifying unknown viruses in transformed human cell lines (e.g., from virus "hunting" in animal reservoirs globally). Number of Likes 1

- My feedback is purely based off my experiences having gone from DoD research to academia...so please take my comments with a grain of salt. When I was hired as BSO for my current academic institution 10 years ago, this was the first time I had dealt with both the NIH Guidelines as well as any type of academic compliance standards such as the IBC and IACUC. Needless to say, it was a huge culture shock on my behalf coming from a fairly strictly regulated lab compliance situation with clear and sometimes immediate consequences (both legal as well as financial) to a very loose compliance oversight with foggy compliance boundaries and almost zero consequences for lack of compliance unless it was a clear and present danger to human health. Now that I've been here awhile, I can clearly see that the system is broken at several levels. First,

on the academic level, actual biosafety/biosecurity "compliance" is determined primarily by the resources dedicated towards "compliance" at the individual institution. If it is high on their priority list, compliance is well funded with both qualified staff, resources to researchers/staff, support from IT, software platforms, and numerous other areas that make the gears turn smoothly in an efficient and effective manner. Unfortunately, if it is not a priority, then there is minimal support, minimal oversight and lots of "checking the box" just to...check the box. Comparing academia, private industry and federal/state labs is like comparing apples to oranges to Labrador retrievers. They're not even on the same playing field. Federal labs are held to significantly higher standards of practicing research than academia with usually pretty swift disciplinary action if there is a failure to comply. Based on my experiences for the last 10 years, the EXACT opposite can be said for lack of compliance in academia. Fortunately, I also have 10 years' experience in private industry research and found that it is a mixed bag of biosafety/biosecurity compliance depending on the funding entity. In a nutshell, you will never be able to actually "enforce" ANY biosafety/biosecurity policy without the ability to have: 1. Qualified and accredited Federal compliance officers without bias to review high risk biosafety/biosecurity concerns and actually have more than a skeleton staff to manage thousands of accounts. Otherwise, you have a repeat of a very needed by wholly inadequate carbon copy of Child Protective Services all over again. 2. Well-defined parameters for academia conducting high risk research. When the guy handing over the giant grant checks and recruiting the rock star PIs is also the same guy that oversees "research compliance"...there is an incentive to ensure that everything is always in compliance. Leaving it to the foxes to guard the hen house is a conflict of interest from the get-go. Ask me how I know...3. Well-defined parameters for private industry conduction high risk research. Depending on if funding came from DARPA or a non-govt entity, different actions were taken based on what the funding source mandated. Standardizing compliance requirement regardless of funding entity may help significantly in pulling more privately funded research back into compliance. Particularly if plans are to sell IP to military/pharmaceutical. If end customer demanded biosecurity/biosafety compliance in order to consider purchase, this may force many private research to buy in.4. Capacity to implement actual consequences (to the piggy bank) for non-compliance. Regardless of how anyone feels about the whole DOGE experiment, it's forced the folks at my institution to re-think how funded projects for research get funding distributed within the institution. Probably will result in cuts to staff that are desperately needed to actually do shit and no cuts to staff that are glorified paper weights. The same went for private industry as well. For example, if I needed $1.4 mil for my 2-year project, my project manager asked for $3 mil KNOWING that every single department between the Dod and us was going to take a slice out of the pie. So, again, not much different from academia in that respect.5. Provide a SINGLE standardized guidance document that meets the needs of Biosafety. Leave Biosecurity to it's own realm of hell for now. Having the BMBL, WHO, ISO, APHIS, FDA, ...alphabet soup of whack-a-mole compliance is a screaming nightmare. Even with a fully qualified biosafety staff with adequate resources and support, spending hours tracking down all the loose ends is insane. Has anyone considered speaking with a systems or industry engineer on how to optimize and streamline all of these current processes. If a handful of folks can turn a dying industry (automobiles) into both a successful and sustainable business model, why can we not borrow from those types of folks to "fix" biosafety/biosecurity such that it can be a robust program for both researchers as well as the community. Number of Likes 4

- I support limiting the scope to biomedical research. If the NIH wouldn't fund it, they shouldn't regulate it.
    - Why wouldn't expanding oversight and biosafety guidance to industry be a benefit? Right now there's a patchwork of local and state regulations. Creating a single federal standard for safe handling will benefit multisite organizations and create a minimum baseline of worker protections. Number of Likes 2
    - It would - but to have real power policy needs to come from an enforcement agency, not a funding agency. The NIH should stay in their lane and other agencies should step up.
    - Exactly, the scope needs to expand to collaborate with CDC, USDA, OSHA, etc to be effective

- If they're exempt in the NIH Guidelines, then they're exempt from oversight all together. Also, can we please exempt zebrafish? They can't even survive outside of an 84 ambient air temperature climate-controlled facility. How rodents that can run away can be exempt, but zebrafish are not. Number of Likes 3

- Peer review is critical due to ever changing technology. Keep the requirement for IBCs to meet in person, by telephone or teleconference in order to have open discourse.• Recommend the designation of a BSO at all institutions that perform research with pathogens assigned BSL2 or higher• Provide resources and training to help IBCs, BSOs, and PIs to interpret and adopt changes• Should include human or animal materials that require ANY import permit, or are isolated from areas endemic or experiencing an outbreak of a RG3 or RG4 pathogen – at present BSOs are not always allowed to gather this data from the permit granting agencies• USDA does not cover the intrastate transport of livestock pathogens, so there should be some required oversight of lab use of livestock (but non-zoonotic) pathogens even if not by NIH• Clinical research – should keep IBC review of human gene transfer studies at early phases – Phase 1, 2a, i.e. prior to sponsor publishing study agent details and early safety information in the literature so that IBCs can assign BSLs to what employees are handling. Sponsors and IBCs don’t always agree on BSL of the study product.• Do need to know if the plasmid is a viral vector transfer plasmid, to verify not being packaged into virions• NIH OLAW and NIH OSP should agree on the timing of IBC approval. In 10/2021 – meant to reduce administrative burden, NIH Office of Laboratory Animal Welfare (OLAW) requires UCAR-grant material congruency prior to grant award if the material will be used at some point during the UCAR protocol duration (maximum 3 years).

- I hate to simplify it into just 3 categories but realistically we're looking at: 1. Standardization, 2. Consolidation, and 3. empowerment. Standardization = standardization of governance which really means "who's in charge and who does it apply to?' Standardization of training. Standardization of IBC registration forms. Standardization of Risk Assessments. Standardization of "cradle to grave" or in this case "the minute it comes into a lab until it leaves the lab" processes for biological materials. Many resources give a "How To" or Best Practices based on a specific setting or methodology. I'd like to see a resource that addresses the entire process from start to finish such as permit requirements, MTA's, training recommendations, containment recommendations, compliance recommendations, waste management, exposure control and decon. Consolidation= consolidation of biosafety "lead" such that even if it falls under multiple agencies (USDA, CDC, NIH,...) who in turn have their own processes in place, can we please

have a single entity that coordinates with all of them so that there overlap and redundancy are reduced on the end user? Consolidation can also allow for dynamic screening and move towards phased modernization to allow for real time updates to testing and oversight to keep pace with advances in biotech industry. Empowerment= give local IBCs the same leverage and reviewing capabilities as IACUC and IRB. By empowering IBCs you're giving them "teeth" to push forward and implement biosafety processes and oversight of research that may have been lacking in the past. Empowered IBCs may be able to reduce "red tape" for low-risk research, enhance local accountability, close oversight gaps with IACUC and IBC and help modernize institutional support systems based on standardized biosafety/biosecurity criteria defined by the new policy. With that being said, Institutional IBC must actually have the SMEs to understand and evaluate submissions. The last thing anyone wants is some admin with absolutely zero lab experience, zero liability, and zero skin in the game rubber stamping IBC approvals with no external oversight or vetting. Number of Likes 12

- There should be a push to adjust oversight to be specific for purpose and at a level where the appropriate expertise lives. For example, scientific oversight is not the same as regulatory oversight, and it should be clearly defined that scientific oversight occurs at the lowest level (i.e., PI peer group) and that regulatory oversight be focused on regulatory compliance only. This will help avoid the scope creep that I often see with IRB, IBC, IACUC oversight.

- IBC oversight should be reserved for use of RG2 agents that are NOT commonly used and/or pose any gain of function or bioterrorism concerns, as well as any use of RG3 or above agents. Local biological/laboratory safety programs should have oversight pertaining to use of RG2 agents that are commonly used and/or DO NOT pose any gain of function or bioterrorism concerns.

- The new federal biosafety policy should include standardization procedures from acquisition to attenuation of hazardous biological materials. All to often, very technical information is provided on what organism/material/manipulation falls into a predetermined category. Then the institution and/or biosafety professional gets to wade through numerous resources to determine best course of action with respect to that material/organism. This has lead to vastly different SOPs which vary from institution to institution for the exact same material/organism/manipulation. Additionally, the new policy should also address institutional risk tolerance. Most research institutions operate as a for-profit entity. Even the ones that say they are non-profit or doing something for the good of all humanity, if it wasn't profitable, we wouldn't be as busy as we are now. Will the new national biosafety policy include language to motivate institutions to invest in their IBCs and biosafety programs? Many are operating with skeletal budget/resources, limited executive institutional support and spotty faculty buy-in. This leaves the bulk of the liability on the biosafety program with little authority to leverage resources to strengthen the program. Number of Likes 3

- IBC review and approval before research initiation- work with agents classified as RG2 or higher, and/or experiments that would require BSL2 or higher containment. Empowering IBCs to determine the appropriate risk classification and containment (by using relevant guidance, such as BMBL), would be a way to simplify compliance.2. Expedited IBC review (and delegated) - Empower IBCs to include a subset of research with RG2 and/or BSL2 containment in this

category based on risk assessment. There are levels of risk when it comes to research with RG2/BSL2, and the IBC has the knowledge and experience to appropriately determine risk and when research can be safety reviewed in a delegated/expedited fashion.3. Greatly expand research that is exempt to essentially include all work capable of being safety conducted at BSL1 containment. Number of Likes 3

- NIH approval should be reserved for the highest risk experiments that would have the most public scrutiny. This gives an additional layer of "we looked carefully at this, and it should proceed" but it should be rarely needed. IBCs should review all RG3+ work and RG2 work with r/sNA of significance (aka not just GFP), then designated review or BSO review reserved for everything else.

- The following research covered under the current guidelines are low risk and could be covered institutionally with BSL-1 policies and procedures (i.e., not requiring IBC review):1. plasmid-based (non-viral) research, including using them for transfection in tissue culture, use in any RG1 organism, and to produce transgenic plants or animals (drosophila, zebrafish, nematodes, etc.).• These types of experiments are generally covered under III-E and/or III-D-4.• Carve-outs could be allowed for expression plasmids that produce toxic/harmful proteins.• There could be a blanket requirement that transgenic organisms cannot be released from the lab. This should not lead to requiring the registration of these experiments.2. Cloning of genes from RG2 and higher organisms that are not capable of replication and are not toxic/harmful into non-pathogenic organisms or systems. There is no reason why the expression of single, innocuous genes needs to be regulated.• These types of experiments are generally covered under III-D-2.3. The cloning of subunits from acute toxins in a system that is non-toxic (e.g., cloning of diphtheria toxin subunit A in the absence of subunit B), should not require registration with NIH OSP. This could simply require IBC registration.4. Anything additional not yet mentioned that is currently covered under III-E.5. Any work with transgenic animals that can be conducted at ABSL1.When experiments are not covered under the guidelines, it should be up to the Institution's IBC to determine how they will regulate them. The focus should be on reducing administrative burden for both the researchers AND the biosafety staff. If biosafety offices are still required to track low risk research, it leads to significant administrative burden that detracts from focusing on higher risk research. Additionally, the organization of the NIH Guidelines should be clear and succinct. The current format of guidelines, exemptions, and exceptions to the exemptions scattered throughout the main body and multiple appendices is challenging to navigate. Number of Likes 4

- NIH biosafety policy should only cover research that falls under the umbrella of what they would fund (i.e., basic and biomedical research that has potential impacts on human health). They should stay out of veterinary and agricultural research.

- I doubt a single umbrella policy is achievable that would encompass all impacts of biomedical and basic research. For NIH funded grants, one can add sections to grant submissions that would require to submit possible safety issues for the study by the investigator. Such submissions should require additional vetting (but with a quick turnaround) by reviewers who can be vetted biosafety professionals or have organizations like ABSA play a role in ethically peer reviewing proposals.

This would allow for better calibration of the risk at NIH level and not leave vetting to academic organizations alone. Number of Likes 1

- Please clarify if the new national biosafety policy will be driven by funding source or type of materials utilized in research facilities. If it will be limited to funding source (i.e.NIH), whatever is rolled out must include language that leaves very little wiggle room for "use your best judgement". This will be particularly critical if IBCs are granted empowerment in alignment with other institutional oversight committees. I also highly recommend excluding "it depends" language that can be easily misinterpreted due to lack of knowledge or experience by non-biosafety professionals or SMEs. Finally, requiring external audit by a 3rd party entity should be considered. Institutions that work with designated high-risk agents are routinely inspected/audited by CDC, USDA, etc. Who is verifying biosafety compliance at institutions who also work with high-risk materials but do not fall under certification/monitoring of a federal authority?

- The problem with reducing oversight is it completely takes away the power institutional safety professionals have to help ensure appropriate practices in laboratories. We already struggle with lack of respect for BSL-1 practices and procedures unless we point to NIH Guidelines (they know BMBL isn't regulatory).We hear a lot "we aren't an FSAP lab" or "it's just BSL-1".So before completely removing certain things we must critically evaluate whether there is actual risk in those spaces should there be no power for safety professionals to enforce practices and procedures. Number of Likes 10
    - I agree. These should have at least a registration process with a safety office and basic review. Number of Likes 5

- I think risk assessment should be given due consideration at grassroots level root level and take initiatives to implement it as a priority for all stakeholders like IBC, IACUC, BSO,s AROs and PIs and especially clinical lab Managers. Submitted please.

- BSAT research should remain heavily regulated. I have worked with CDC registered labs and non-registered labs. The CDC registered labs are better and safer because the CDC visits them during the recertification process. The labs that aren't registered are self-policed and are nowhere near as compliant.

- It seems that most IBCs oversee research with a variety of hazards, and I think the scope could be logically extended to cover use of recombinant and wild type agents and toxins as suggested by others. Many IBCs are burdened with review of low-risk rNA research which might better be overseen by local biosafety offices rather than requiring full IBC approval and oversight. Number of Likes 1
    - There are two definitions of local that I can think of -1) an institutional office, operating with the NIH Guidelines and whatever other biosafety requirements may come at them from State, County, or City requirements.2) City/County - such as exists in the Boston/Cambridge area that has some oversight component. Number of Likes 1

- The most effective scope is broad enough to catch risky capabilities wherever they arise yet graduated enough to spare low-risk science from heavy process. That means shifting from a

molecule-centric rulebook to a capability- and activity-based, tiered system; empowering IBCs; hardening incident learning and supply chains; and staying tightly harmonized with the unified federal DURC/PEPP architecture now in motion. Number of Likes 1

- Risk based to match how the biosafety office and IBC reviews research protocols Number of Likes 1

- The BMBL 6th addition should be the standard. All biosafety levels should follow the same process Number of Likes 1

- Consistency with BMBL is necessary. Number of Likes 2

- Our current IBC reviews both rDNA and biological agents categorized at RG2 or RG3. I believe that having the IBC review RG2 agents as well as rDNA is important for a modernized biosafety policy. Number of Likes 3

- CDC recommendations in BMBL should be requested as required because many researchers hold the "recommended" as the key to reducing the risks and behaviors in the laboratories. Number of Likes 1

- I would like to see a general harmonization between the federal agencies on their process for compliance. Number of Likes 3

- The policy must encompass the NIH guidelines, the BMBL, OHS and PHS policy, and APHIS policies. The policy must be actual policy and have consequences to not adhering to it. For example, with animal research, if there is a non-compliance, the researcher can be stopped from doing animal research for a period of time or indefinitely. Number of Likes 1

- They definitely need to involve scientists, safety professionals, etc. and not just govt and MD/DOs....allow for risk assessment via the IBCs and keep it as non prescriptive as possible.

- Tough questions because who can decide on the level of research? Given the advances in technology and science overall, there should be additional oversight to determine what research can be exempt.

- The NIH listening session 6 opening remarks included requests for "review and approval of lowering requests" and specifically lumped all RG 3 and 4 where as an example, NIH would review and approve all requests and then work would be eligible for IBCs to approve subsequent requests. I think this misses one important piece of information that I hope will be considered as a consideration towards a risk based approach to lowering containment levels. Working with an attenuated strain (one that is well documented as having either or lower risk or is avirulent) of a risk group 3 agent is a very different risk than working with the wild type strain of the same organism. Using risk group only as the measure of which group/entity can lower the containment level misses the mark for a risk based approach. This follows a number of comments already proposed where this assessment should be based on true risk and this seems a great area to allow for the local IBC to make that initial determination for lowering of containment level without the

need for NIH approval. This "exemption" can be clearly defined to avoid exploiting this power to lower containment level. Number of Likes 1

- Empowerment carries significant responsibility. The last thing a high-stakes environment like with RG3 needs is decision-making by individuals with little to no hands-on work experience. Risk assessment in such settings must be led by professionals with real time work and operational experience, not solely didactic training. Practical exposure fundamentally shapes judgment, and as we all know, risk assessment can vary widely depending on the assessor. If the IBC and Biosafety are being empowered, they must be staffed with individuals who possess the appropriate hands on work experience, credibility, and demonstrated competence—especially when overseeing high-risk environments like with RG3, Otherwise, this risks becoming an added layer of administrative burden rather than a meaningful safety enhancement. Number of Likes 2

- The NIH must position Biosafety guidelines to be forward looking to synthetic biology platforms, especially those potentially driven by AI in which human oversight of specific mechanism of action is limited. This may require a careful consideration of what can be considered "gain of function" research and how to put guardrails on this. Number of Likes 2

- In my opinion the current level of local and NIH oversight feels appropriate, especially considering the core goal of protecting research participants and maintaining public trust. The existing systems, whether through IRBs/IBCs, NIH policies, or other federal regulations, are in place to make sure ethical standards are followed and that any risks are carefully considered and managed. I do not believe this oversight should be lessened. Number of Likes 2

- What works for research will not work for public health. Keep NIH to grant review process. Number of Likes 1

- All pathogen-based vector systems and all recombinant work must remain registered, even under a risk-based oversight framework. The goal is to streamline oversight where warranted, not to create blind spots. Some research could justifiably receive less active NIH or local oversight based on decades of safe practice and overlapping federal regulation—but only if comprehensive, standardized biosafety data exist to demonstrate that safety. Today, those data are dispersed and unpublished. Pipe Dream: Before reducing oversight, national biosafety performance repository to aggregate anonymized incident, inspection, and compliance data across institutions and agencies. This would allow empirical calibration of oversight intensity—where proven safety records support reduced review, and where emerging or complex work continues to receive full scrutiny. However, registration must remain universal. Every pathogen-based vector system and every recombinant DNA or synthetic construct should be registered and traceable within institutional and national frameworks. Registration is the foundation of accountability; it enables pattern recognition, incident analysis, and rapid policy response. Number of Likes 1

- I have less to contribute on this subject merely because my current institution does not necessarily do much research with "high risk" materials. Based on feedback from my IBC chair, 75% of everything we do could be DMR or administratively approved by BSO based off risk assessments. Due to the current NIH Guidelines, we are having to do significantly more to maintain compliance. I would love for my IBC to provide feedback on field studies, work with

non modified pathogens or toxins not on CDC list, but unfortunately, that is not within our current scope. Risk based IBC review sounds great but it's limited by what is or is not in the Guidelines and interpreted by institutional officials. If those institutional officials have a high risk tolerance, then it doesn't really matter what the policy says. Number of Likes 1

- I'm still listening to others while formulating my opinions. There are so many facets to consider. In general, I think Guidelines should cover all biological research with WT RG-2,3&4 agents, any genetically modified agent and any arthropod or plant work. The NIH should build a system to better match IBC/IACUC where expedited and designated reviews are permissible under certain conditions. Similarly, it should be mandated that funds be set aside for administration of this oversight. The Guidelines should be more specific about what "periodic' review means. And the Guidelines should apply to all research, regardless of funding source. To do this and have 'bite' I think consequences would need to move from grant funding at risk to fines. The exempt list of work should be expanded in an objective, risk based manner but exempt work should still require and administrative review to confirm exempt status. Number of Likes 5

- I would remove the need for non-pathogenic agents, such as BL21 E.coli or AAV vectors, to go to a convened meeting. I don't argue with the addition of wildtype infectious agents, at Risk Group 2 and higher, but forcing things to go to a convened meeting is a burden that is simply not necessary when much of the precautions for wildtype agents are standardized. I don't know if the answer is putting these types of experiments in "III-E" (should go to meeting but does not have to wait) or making a separate process for registration versus going to full committee. Number of Likes 2

- Get rid of Section III-C. There is no reason for IBC review of these studies when FDA oversight takes care of everything.

- What should be regulated: work with agents classified as RG2 or higher, and/or experiments that would require BSL2 or higher containment. Empowering IBCs to determine the appropriate risk classification and containment (by using relevant guidance, such as BMBL), would be a way to simplify compliance. Number of Likes 3

- GFP and other tracking genes that have shown no health risk could require less local or NIH oversight. Number of Likes 2

- All manipulation of all materials in all biosafety levels should follow the same guidelines. Number of Likes 2

- Reporter genes that have not shown any health risk to the end user could require less local or NIH oversight. Number of Likes 3

- Our institution spends a lot of time reviewing replication incompetent viruses and studies in animals at ABSL1. These items shouldn't require full review by IBC. Number of Likes 2

- Simple use of stock transgenic mouse models or even crossbreeding of these strains in an ABSL-1 setting, seems like something where IBC oversight is an unnecessary burden when IACUC

oversight is already in place. Even if these are notionally "exempt" experiments, it's still an administrative burden for both investigators and committees. With careful consideration that any transgene or knockout does not exceed ABSL-1 containment, this seems like a holdover from when transgenics were a newer technology. There are now decades of safety studies that may better inform how to manage transgenic colonies without the need for IBC oversight. Number of Likes 3

- Get rid of Section III-C. There is no reason for IBC review of these studies when FDA oversight takes care of everything. Number of Likes 1

- Do homologous recombination experiments need to be IBC reviewed? There is plasmid amplification in *E. coli* and transfection using synthetic forms of genes that code for a number of proteins which are part of a naturally occurring organism, in our case *C. albicans*. We review this at committee, but it seems like these experiments could be administratively reviewed/approved.

- Any risk group 2 or lower biological agent research needs less oversight Number of Likes 2

- Update the guidelines to reduce the level of review of common lentivirus, adenovirus, AAV work done at the bench and in mice from III-D to III-E. Number of Likes 2

- I would like the RG1 type recombinant (e.g., AAV, plasmid) small lab animal experiments to be exempted from IBC review or changed to an IBC notification type experiment status. For example, we have PIs who work with AAV in mouse or rat models that are low risk. Whenever they change a gene insert, we have to go back to the IBC for full committee review. I recommend reducing the compliance effort on low-risk experiments. I also recommend requiring wild type RG2 and greater experiments to be reviewed by the IBCs. Number of Likes 1

- If the new gene insert does not change the risk assessment, and the AAV vector is similar to the AAV vector(s) previously approved, these can be administratively approved. Number of Likes 2

- NIH biosafety policy should apply to all types of biological research NIH funds Number of Likes 1

- The scope should require a biosafety professional review all biological material work for risk assessment at an institution, not just for high containment, large scale or gene drive research. The scope should begin at grant application and include a section regarding biosafety and biosecurity measures and provide funding sources for applied biosafety for personnel and environment protection. funding should include the risk of the research and the capacity of the institution to provide oversight awarded grants and published papers should include biosafety containment levels and procedures. Number of Likes 3
    - Regulations should not be constrained to NIH funded work. This leaves an enormous gap for privately funded R&D as well as large scale manufacturing. While I don't think that NIH approval should be required for work in this space, the process of assessing risk, and practices for managing risk should not be optional for private organizations. Right now Safety Professionals have to connect the dots back to the General Duty Clause, or other

local/ state regulations, and this leave a lot of room for varying degrees of worker protections.

- The scope must evolve from oversight of known pathogens to the oversight of novel, engineered risks. Current guidelines lag behind the rapid adoption of in-house protein engineering and viral vector production (e.g., AAV, LNPs, and nucleases). NIH should mandate HEPA filtration and closed-system containment for all aerosol-generating work involving novel entities such as engineered LNP nucleases and viral vectors, regardless of the "base" BSL-1 classification often used as a loophole. Policies should require institutions to generate formal, internal Safety Data Sheets (SDS) for all engineered "mystery agents" before bench work begins, rather than relying on the data of the original parent proteins. When internal management suppresses a Biosafety Officer's (BSO) determination of hazard, the NIH should have a mechanism for direct intervention and unannounced audits. The scope must evolve from oversight of known pathogens to the oversight of novel, engineered risks. Current guidelines lag behind the rapid adoption of in-house protein engineering and viral vector production (e.g., AAV, LNPs, and nucleases). NIH should mandate HEPA filtration and closed-system containment for all aerosol-generating work involving novel entities such as engineered LNP nucleases and viral vectors, regardless of the "base" bsl-1 classification often used as a loophole. Policies should require institutions to generate formal, internal safety data sheets (SDS) for all engineered "mystery agents" before bench work begins, rather than relying on the data of the original parent proteins. When internal management suppresses a biosafety officer's (BSO) determination of hazard, the NIH should have a mechanism for direct intervention and unannounced audits.

- I support IBC review of human gene therapy trials or any trials involving attenuated biological agents. The open discussion provides credibility to the outside community as well as to the nurses and pharmacists who deliver or prepare the therapies. The open discussion empowers biosafety officers with peer-reviewed answers to the questions that staff, or occupational health, administration, etc. may ask.

- Fluorescent proteins and sensor proteins should not require IBC approval even if being put into pathogens. Focus on genes that clearly present a risk - antibiotic resistance genes, toxin and virulence factors, transcription factors that might be involved in oncogenesis or tumor suppression. *E.coli* BL21 (enough said). Transgenic flies that are not Gene drive modified. GMO *C. elegans* should not require full IBC review before work starts (and maybe should be exempt). Fluorescent proteins and sensor proteins should not require IBC approval even if being put into pathogens. Focus on genes that clearly present a risk - antibiotic resistance genes, toxin and virulence factors, transcription factors that might be involved in oncogenesis or tumor suppression. *E. coli* bl21 (enough said). Transgenic flies that are not gene drive modified. GMO *C. elegans* should not require full IBC review before work starts (and maybe should be exempt). Number of Likes 4

- Plasmid work, risk group 1 bacteria (unless someone is immunocompromised), absl-1 animal work, low risk commercial assay kits Plasmid work, risk group 1 bacteria (unless someone is immunocompromised), absl-1 animal work, low risk commercial assay kits Number of Likes 1

- Remove all plasmid transient transfections of cells from oversight where genes are not oncogenic/toxic/suppressed TSGs. Number of Likes 3

- Remove genetic manipulation of drosophila/C. elegans from IBC oversight requirements. Number of Likes 3

- Many rDNA research areas could be listed as exempt from the guidelines. For example, non-replicative AAV usage to express GFP does not need full committee review by an IBC or could be reviewed by a DMR process. Number of Likes 3

- rg1 research--e.g., recombinant work with drosophila, not including any high-risk inserts. Number of Likes 2

- Lower risk and well-studied host-vector systems should be exempt from NIH/IBC review. Systems like agrobacterium should be considered for less oversight depending on the genes expressed. Incorporating risk assessment into the review threshold will minimize the institutional review of low-risk research and allow IBCs to focus on review work that is truly high risk. For example, using housekeeping or metabolism genes from RG-2 or RG-3 organisms in prokaryotes to lower eukaryotes like in Section III-D-2a should not require the same level of oversight with IBC review required before initiation of work that expression of virulence factors or other genes that might qualify as GOF. Number of Likes 2

- I think that there are certain types of research that could at this point fall under III-F of the currently guidelines. or example work with transgenic mice is currently exempt, but transgenic fish and transgenic frogs are still III-D-4. I don't believe work with transgenic fish or frogs is inherently riskier than work with transgenic rodents. Number of Likes 1

- Based on the types of research we see at our institution, the following could require less local or NIH oversight: 1. Cloning in risk group 1, Non-K-12 *E. coli* Strains, 2. Work with non-pathogenic hosts - beyond the current exemptions, 3. Transgenic Animal Models (Non-Gene Drive) - particularly work in Drosophila, *C. elegans*, etc. 4. Use of commercially available kits for reporter assays or protein tagging, 5. Crispr/Cas-9 editing in cell lines (not involving oncogenes or infectious agents). Number of Likes 2

- Most biological research requires local oversight, NIH should only provide oversight for research within their purview. Number of Likes 2

- Research with *C. elegans* and *D. melanogaster* is lower risk in most environments and deserves less oversight. Risk assessments for GMOs should include more flexibility for genetic constructs long considered lower risk or non-hazardous, such as the use of reporter genes. Number of Likes. 2

- Any research that involves infectious materials for which the outcome of infection is unknown (i.e. for which data is not available) should require local approval and NIH oversight. This follows the precautionary principle and requires empirical data to drive risk assessment.

- Biosafety oversight should extend to RG2 and higher wild-type (WT) and recombinant agents. Existing laws do not explicitly cover WT RG2 agents, creating a regulatory gap. Number of Likes 4

- Creation of most transgenic models used in biomedical research. Number of Likes 4

- Work with RG1 organisms, along with the genetic engineering of the usual invertebrates and mammals in generating an animal model, could use less local or NIH oversight (any research that would enhance antibiotic resistant or toxin production in microorganisms, as well as the use of an animal as a vector for the enhanced microorganism, would already fall under DURC policy).

- Materials that are risk assessed to have a (data-based) low potential for infection (including after transfection/modification) and which are handled with appropriate engineering and administrative controls- as dictated by local IBC policy, should require less local committee and NIH oversight. Number of Likes 1

- Creation and use of transgenic animals that can be handled at BSL1 can fall under institutional policies rather than NIH oversight. Number of Likes 1

- A review of if IBC oversight should be required for post FDA approval monitoring studies of human gene therapy/transfer studies where there is already a commercially available FDA product. This type of research may require less oversight than new products.

- I think IBC's should be empowered to determine how to regulate low-risk research at their institutions. There should be a clear definition of low risk research that is not regulated under the guidelines and a directive to IBCs to establish institutional policies for that research. This will allow institutional policies that can reduce administrative burden for both the researchers AND the biosafety staff, allowing more focus on higher risk research. The following research covered under the current guidelines are low risk and could be covered institutionally with BSL-1 policies and procedures (i.e., not requiring IBC review):1.plasmid-based (non-viral) research, including using them for transfection in tissue culture, use in any RG1 organism, and to produce transgenic plants or animals (drosophila, zebrafish, nematodes, etc.).• These types of experiments are generally covered under III-E and/or III-D-4.• Carve-outs could be allowed for expression plasmids that produce toxic/harmful proteins.• There could be a blanket requirement that transgenic organisms cannot be released from the lab.2. Cloning of genes from RG2 and higher organisms that are not toxic/harmful into non-pathogenic organisms or systems.• These types of experiments are generally covered under III-D-2.3.Anything additional not yet mentioned that is currently covered under III-E.4.Any work with transgenic animals that can be safely conducted at ABSL1.Something that can additionally require less oversight is the cloning of subunits from acute toxins in a system that is non-toxic (e.g., cloning of diphtheria toxin subunit A in the absence of subunit B).This should not require approval/registration with NIH OSP, but still should require IBC approval. Number of Likes 8
    - I would add that some viral vector systems, split on 4+ plasmids, used for gene expression or suppression in cell culture only may also benefit from less full committee oversight requirements (still has biosafety oversight!) by carving out conditions by which the work can be conducted safety following rigorous institutional policies and practices for the use

of these very safe systems in cell culture. This type of thing could go through a designated member review for example instead of full committee. Number of Likes 5.

- Commonly used RG1 and RG2 agents and vial vectors that will not result in any gain of function or bioterrorism threats - that have been come industry standard in university and biomedical labs should no longer need IBC oversight.

- To answer which types of research should require less local or NIH oversight, a clear distinction must be made between established biological entities and novel research matter. Reduced oversight should be strictly reserved for research involving well-characterized, non-pathogenic laboratory strains (e.g., E. coli K-12) or commercially available, FDA-approved products that have a minimum of 10 years of accrued general population safety data and clear, standardized national guidance. However, this "lesser oversight" must not be used as a loophole for emerging technologies. Research involving novel entities, such as AAV, LNPs, mutated proteins, or nucleases, must be ineligible for streamlined oversight until a decade of longitudinal safety data is documented, as clinical approval (FDA/CBER) does not account for the unique aerosol risks, operational hazards, or large-scale handling risks found in research and production environments. Safety for these novel entities is currently compromised by a "grey area" in which a lack of citable, public-facing federal authority allows management to prioritize production speed over safety. To bridge this gap, the NIH must host a Centralized Best Practice Webpage that provides non-negotiable directives for the handling, inventory, and disposal of novel agents, effectively removing an institution's ability to "negotiate" away safety protocols. Furthermore, ELNs should require mandatory "Safety Entries" where researchers must cite established storage and decontamination guidelines before work can proceed, ensuring "mystery matter" do not vanish without a trace. Crucially, the oversight framework must be updated to treat aerosol potential and dermal absorption as primary risk factors on par with needle-stick prevention, regardless of an agent's "non-pathogenic" status. Because long-term exposure to novel reagents often leads to poorly documented symptoms that impact disease potential over time and are rarely covered by traditional health insurance due to tracking difficulties; these inhalation and dermal risks require the same level of strict federal enforcement as established pathogens. By professionalizing safety roles through authorized third-party training and providing clear, citable standards, the NIH can focus its resources on these high-risk novel entities while safely streamlining oversight for established research with a proven 10-year track record.

- I feel that some oversight of non-recombinant pathogens is appropriate, but it should be risk based and only include RG-3 and RG-4 pathogens. Risk should also be considered for recombinant work because not all genes have equivalent risk and housekeeping genes shouldn't have the same risk of expression that virulence or resistance genes have. Number of Likes 2
    - RG-2s can have significant impact on public health & the infrastructure that supports public health if lab-based release occurs. I am not sure it is wise to let all RG-2s be worked with unchecked. Number of Likes 2
    - I'm not suggesting that work with RG-2 pathogens be unchecked, but that they be reviewed at the institutional level, rather than be included in any regulatory framework that comes out of this effort. Any recombinant/synthetic related work with RG-2 should most definitely be included for required review with the revised regulations. Most IBCs review RG-2 pathogen only work anyway so it isn't unchecked.

- There should just be three levels of oversight: exempt (for low-risk work), IBC review and approval before initiation, and Delegated review and approval prior to initiation. IBC review should include new research involving etiological agents, gene drive organisms, synthetic organisms, and uncharacterized agents. Delegated review should include modifications to research that was previously approved by the IBC that does not change the level of risk or that lowers risk and research involving established defective viruses, vectors, and vector systems (replication incompetent viral vectors, including packing cell lines, transient transfection systems, and replicon systems). Institutions should have flexibility in how they implement delegated review (e.g., IBC member review outside of full committee or biosafety office review).

- Work with agents classified as RG2 or higher, and/or experiments that would require BSL2 or higher containment Number of Likes 1

- Tier 1 (Registration/Exempt): Low-risk (RG1/BSL-1), well-characterized research managed via administrative review by qualified biosafety staff.• Tier 2 (Expedited Review): Moderate-risk (RG2/BSL-2) protocols reviewed by IBC subcommittees or designated biosafety officers (DMR).• Tier 3 (Full IBC Review): High-risk research involving RG3/RG4 (BSL-3/4) agents, novel biotechnologies, or significant gain-of-function potential.• Number of Likes 7
    - Tier 1 review by BSO and IBC Chair works. However, Tier 2 is where the majority of the LAIs take place so Tier 2 should at minimum get DMR (including faculty well versed in the agent and procedures in the protocol) review. Number of Likes 2

- Full IBC (or equivalent committee) review should only be needed for higher risk research or novel research that has potential and uncertain risk. Standard things that the committee has seen a hundred times should have expedited review. I fully support Designated Member Review. Number of Likes 5

- The NIH should include DMR along with exempt and full Committee review. IBCs do not need to constantly review the same lower risk activities among multiple PIs. This could be either a DMR or administrative review pending BSO review only. It can save significant amounts of time for IBCs where reviewers already have numerous responsibilities. Number of Likes 8

- If this policy is truly a brand-new policy, then it could include requirements beyond or adjacent to what the IBC reviews. I think there is a category of research that is low risk and shouldn't require IBC review and approval but should have standard requirements applied to it - chiefly that all agent waste be appropriately decontaminated prior to disposal. Just because something is low risk doesn't mean it should be allowed to be released into the environment and I think that is where some of the heartburn lies regarding exempt - especially recombinant - work. And you don't need a full IBC to require decontamination of environmentally-biohazardous waste. Number of Likes 4

- Any assessment of the types of research that would fall within different levels of oversight should be based not only on the risk group classification but on criteria such as routes of infection, endemicity, the use of high risk lab procedures, and worker competency; basically, the incorporation of local factors in the evaluation. In any case, even with the continued use of the

risk group - biosafety level correlation, the basic fundamental level of review should be the Institutional Biosafety Committee Although the transfer of drug resistance to a microorganism would continue to be reviewed the NIH Director, the IBC should be empowered to readily access individuals with expertise appropriate to the type of research being reviewed, if necessary. In addition, the IBC should have the option of Designated Member Review to not only facilitate a review but to also place that protocol in the hands of a knowledgeable committee member/ad hoc expert, and perhaps use a form of Post Approval Monitoring for those research projects that present increased risks to the safety of lab personnel and the community at large. Number of Likes 2

- Model organisms w/o inserts that increase risk; e.g., Drosophila, *C. elegans*, etc. as long as mods keep them at RG1. RG1 and RG2 organisms with inserts that do not increase the risk profile. All should be able to be approved by DMR. Model organisms w/o inserts that increase risk; e.g., drosophila, *C. elegans*, etc. As long as mods keep them at rg1. rg1 and rg2 organisms with inserts that do not increase the risk profile. All should be able to be approved by DMR.

- Low-risk work that should not require IBC review: recombinant and synthetic nucleic acids and modified organisms that are not biohazardous (e.g., non-pathogenic microbes, modified eukaryotic cell lines) and established animal models with or without genetic modifications that do not have a gene drive and do not pose a risk to local ecosystems (lab rodents, zebrafish, fruit flies, *C. elegans*).I would not base the demarcation of risk on BSL or RG, as there are plant and animal pathogens that are RG1/BSL1 but pose significant risk to the community, ecosystem, or agriculture and those should be subject to institutional oversight.

- Could eliminate IBC review of, and defer to BSO review/no requirement to publish in the IBC minutes the following experiments currently covered by the NIH Guidelines: Use of stably transduced or transfected mammalian, avian, insect somatic cells to rodents if the modification does not change the risk inherent to the wt cell – employee impact of exposure is the same as wt – the IBC could be more restrictive (e.g. use of Rabies-Vector Species cells, wildlife, etc.). Ecotropic replication-defective retrovirus vectors – must verify no amphotropic envelope o Requirement to provide source and nature of nucleic acid sequence if from mammalian, avian, insect source or RG1 prokaryote or virus – this could be an attestation by the PI vs. listing in NIH Guidelines' registration document.

- IBC's should be allowed to review protocols via a designated member review process akin to what other oversight committees are allowed to do. Number of Likes 6

- Oversight should be proportional to risk. A tiered system would allow institutions to allocate limited biosafety resources effectively:• Tier 1 (Registration/Exempt): Low-risk (RG1/BSL-1), well-characterized research managed via administrative review by qualified biosafety staff.• Tier 2 (Expedited Review): Moderate-risk (RG2/BSL-2) protocols reviewed by IBC subcommittees or designated biosafety officers.• Tier 3 (Full IBC Review): High-risk research involving RG3/RG4 (BSL-3/4) agents, novel biotechnologies, or significant gain-of-function potential. Number of Likes 5

- Oversight of low risk (RG1/BSL1) activities should be left to the institutions. A lot of IBC time is wasted reviewing activities that do not pose a risk, simply because rNA/sNA is involved. IBC review of clinical trials that are already under the oversight of the FDA also seems redundant. It would make more sense for IRBs to include a biosafety professional on their committee to review gene therapy clinical trials than for those trials to require IRB and IBC review. Number of Likes 2

- Experiments with transgenic animals in addition to rodents e.g. flies and zebra fish Number of Likes 3

- Why does buying a transgenic pig for an experiment need to go to a convened meeting, but buying a transgenic rodent does not? Rodents would more easily escape, but keeping transgenic animals from the environment is more of an IACUC issue anyway. This doesn't seem to be based on risk at all. Number of Likes 1

- Clinical trials could largely be overseen by FDA with some local jurisdiction for IBCs. Or at least not require review of clinical study products that have already been approved (for example, not have full review for every CAR T cells product) Number of Likes1

- The IBC role in human gene transfer seems superfluous when the FDA and IRB are looking at safety profiles already. Why do things like CAR T cells, which are so common now, need to keep coming to convened meetings? Why do FDA-approved treatments need to go to meeting if they are being used for a different type of cancer or at a different dosage (i.e., for research, but with no substantive change for the researcher's risk). Many viral vectors are purchased and go right into cell culture or an animal. Without much if any manipulation, precautions tend to be standardized. So why does this need to go to a convened meeting? It seems silly that something going into one type of nonpathogenic *E.coli* needs to go to meeting while another type is exempt. Shouldn't this be based on the properties and/or origin of the transgene? Number of Likes 3
    - FDA and IRBs are not looking at clinic-level biosafety practices and clinic staff are not well-versed in biosafety, they know infection control, which is not the same thing. IBCs serve a vital role in educating clinic staff about biosafety and appropriate handling of recombinant and infectious materials. Number of Likes 1
    - This could be from biosafety or EH&S, not necessarily IBC. I think there could be other ways to accomplish the safety review. Open to changes. Number of Likes 2
    - Some level of biosafety review (whether IBC or EHS) is appropriate for clinical trials because the IRB/FDA process focuses on the safety of the human research subjects, not the research personnel or community.

- I started wondering less about what made what list and various risk assessment templates and more about the broader scope of any biosafety policy. For example, in Texas, Google says there are almost 200 post high school institutions of higher education. Of those, 156 are public academic institutions and 44 are private. Remove the technical schools and JUCOs and you still have almost 100 academic institutions in Texas that may or may not have the faculty/facilities/funding to conduct research that may or may not be covered in this new policy. On a college, I was thrilled to see a greenhouse and all sorts of new buildings on campus. A quick website search revealed an IBC and posted schedule. So, I then started wondering how many labs

(nation-wide) were working with "bad bugs"...or more realistically, how many identified as providing BSL3 containment? Just BSL3, nothing else. And I didn't specify current operational status so there's LOTS of wiggle room in what Google spit out for me. The answer was "there is no national registry for BSL3 facilities" however, it is estimated that there are over 1500 labs across the US including federal, pharma, clinical, and academia. Interesting....when I dug a little deeper, a 2022 paper identified 148 distinct institutions that published research originating from BSL3 labs. Huh. So, there could be anywhere between 150 to 1500 BSL3 labs that may or may not be registered with the Select Agent Program, NIH, or other federal and/or state entities depending on what is manipulated in those labs and who's funding it at any given time. So, out of curiosity, I asked Google how many facilities receive NIH funding for r/sNA research and how many registered IBCs there were with the NIH. There were over 750 facilities conducting r/sNA and over 2500 registered IBCs with the NIH. The NIH folks can verify how accurate Google is but for all intents and purposes, let's just say there is a bunch. All of this was merely an exercise on my part in trying to gain a better understanding of the breadth and scope of a national biosafety policy when we don't even really know the breadth and scope of EXISTING policies scattered over the numerous state and federal alphabet soups of agencies. Will the new policy be tiered based on NIH funding? Or maybe risk? What about collaborations with private labs that may have higher containment availability than an academic institution? Will it focus predominantly on those huge institutions doing amazing research and just have a ton of N/A boxes to check for the overwhelming majority of institutions that may have smaller, lower risk research programs but still fall under the policy scope? Will it be exclusively for those receiving federal funding or will a national biosafety policy be applicable to any lab doing research that may pose a public health, environmental or agricultural risk? I'll leave you with this...how do the smaller institutions of the country (and there are hundreds nation-wide) go about implementing a new national biosafety policy that may or may not be unintentionally tailored toward the top 50 NIH funded research entities spread over 26 states with unlimited research scopes and check most of the boxes in the risk categories? Additionally, many of us responsible for implementing biosafety policy are currently laboring under limited guidance, shrinking resources, and growing scrutiny from both inside and outside our institutions.

- I hope the new policy will still have clear statements how to treat biological waste generated from BSL1 and ABSL1 facilities. For example, administration of AAV to the animals is a very common experiment. I hope there are clear instructions how to treat animal waste generated from animals administered with AAV.

- Maybe a better question would be "how would you like to see consolidation of end user responsibility/inspection/compliance such that it meets requirements of multiple oversight authorities"? To significantly oversimplify it, how can I use one annual physical + the medical eval form to cover band, theater, soccer, and track for my kid? That's 4 extracurricular activities taken care of with one single physical/form. I realize labs are not kids, but understanding the overlap, continuity of containment criteria, and addressing the primary biosafety concerns of that oversight entity require that level of redundancy? Number of Likes 1

- A more full accounting of LAIs would help answer this question. Much of the LAI data available is based on LAIs from long ago which are less relevant now that mouth pipetting and bench top blenders are not the norm. Number of Likes 3