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COMS Policy Introduction

I. Purpose

Harvard University's Committee on Microbiological Safety (COMS) serves as the Institutional Biosafety Committee (IBC) for Harvard as well as the Harvard-affiliated medical and research institutions listed in Appendix A ("List of Institutions Served by COMS and BSO Assignments").

II. Scope

COMS is responsible for reviewing all research projects involving specific materials, COMS-Regulated Materials ("CRM"), as defined in the Policy Introduction (II) Scope at Harvard and the Affiliated Institutions. For research that fall under the purview of the NIH Guidelines, COMS reviews all projects conducted at or sponsored* by COMS affiliated institutions. For research that does not fall under the NIH Guidelines, COMS reviews all projects using CRM conducted at COMS affiliated institutions. Projects using these materials at institutions under COMS purview may not commence without COMS approval.

COMS Regulated material(s) or CRM are defined as:

- Recombinant or synthetic nucleic acids as defined in the National Institutes of Health (NIH) Guidelines for Research Involving Recombinant or Synthetic Nucleic Acid Molecules (NIH Guidelines);
- Human or nonhuman primate blood, cells, tissues, fluids, and secretions;
- Biological toxins subject to the National Select Agent Registry Program; and
- Bacteria, viruses, fungi, parasitic protozoa, and prions.

III. Function

So that the biological aspects of the research are conducted in a safe manner using established biosafety standards, principles and practices, COMS shall establish, maintain, and update policies and procedures on the proper use of CRM. COMS also

*Sponsor may be defined several ways in the regulations, the most salient are: 1) an individual who supervises the research training experience of individual fellows supported by a fellowship award; or 2) any financial support of the research (i.e. a subaward where the Subrecipient will be conducting research requiring COMS/IBC review); or 3) as defined in 21 CFR 50.3: "a person who takes responsibility for and initiates a clinical investigation. The sponsor may be an individual or pharmaceutical company, governmental agency, academic institution, private organization, or other organization." i.e. develops the protocol/investigation, which may be conducted at multiple sites. Questions about sponsorship should be directed to the COMS Office and they will be reviewed on a case-by-case basis. Should the COMS office determine that a project requires COMS review, the institutional biosafety officer will be notified.

shall establish minimum standards and best practices for the oversight and administration of research with CRM that may pose safety, health, or environmental risks, including, for example, requirements for education and training and for laboratory safety policies. All COMS materials must comply with applicable biosafety standards and applicable federal, state, and local laws and regulations and also shall take into consideration relevant worker safety, public health, agricultural and environmental protection, and ethical standards.

IV. Roles and Responsibilities

Harvard University

Harvard is responsible for running COMS and thus has the authority to establish policies and procedures that COMS shall follow in its initial and continuing review and approval of applications, proposals, and activities. For research conducted at or sponsored by Harvard, Harvard also is responsible for compliance with all training and other safety requirements imposed by COMS or by federal, state, or local legislation or regulation. Specifically, Harvard shall:

A. Establish and implement policies for the safe conduct of research involving CRM;
B. Establish and maintain COMS in compliance with the NIH Guidelines for Research Involving Recombinant and Synthetic Nucleic Acid Molecules (NIH Guidelines);
C. Appoint a Biological Safety Officer (BSO) to serve as a member of COMS;
D. Appoint at least one individual with expertise in plant, plant pathogen, or plant pest containment principles to serve either as a regular member of COMS or as an ad hoc member of COMS. This person must be consulted any time COMS considers a research proposal governed by the NIH Guidelines Appendix P, Physical and Biological Containment for Recombinant DNA Research Involving Plants;
E. Appoint at least one individual with expertise in animal containment principles to serve as a member of COMS;

F. Choose as members of COMS only people with appropriate expertise. Provide appropriate training for the COMS Chair and all COMS members, including without limitation the Biological Safety Officer and other containment experts;

G. For research conducted at or sponsored by Harvard, provide appropriate training on laboratory safety and implementation of the NIH Guidelines to all Principal Investigators and laboratory staff;

H. For research conducted at or sponsored by Harvard, establish mechanisms for having all research involving recombinant or synthetic nucleic acid molecules or other hazardous biological materials reviewed by COMS;

I. For clinical trials conducted at or sponsored by Harvard, establish mechanisms for compliance with the NIH Guidelines by all Principal Investigators (PIs) including, for example, the requirements that:

    1. All aspects of NIH Guidelines Appendix M must be appropriately addressed by any PI who is conducting human gene therapy trials; and
    2. No research participant may be enrolled in a human gene transfer experiment until approval has been obtained from COMS, the local Institutional Review Board (IRB), and any other relevant regulatory bodies. If review by the NIH Recombinant DNA Advisory Committee (RAC) is initiated, COMS approval will be withheld until the RAC has concluded its review and COMS has considered the RAC's comments and recommendations.

J. For research conducted at or sponsored by Harvard, determine the necessity for health surveillance of personnel involved in connection with individual recombinant or synthetic nucleic acid molecules projects, and if appropriate, establish and maintain a health surveillance program for such projects. Such a program shall be required if personnel are:

    1. Engaged in large-scale research or production activities involving viable organisms containing recombinant or synthetic nucleic acid molecules that require Biosafety Level Three (BL3) containment; or

2. Engaged in animal research involving viable recombinant or synthetic nucleic acid molecules-containing microorganisms that require BL3 or greater containment.

K. For research conducted at or sponsored by Harvard, work with COMS to report any significant problems, violations, or any significant research-related accidents or illnesses to applicable governmental agencies, following the COMS Incident Reporting and COMS Clinical Trial policies;

L. For research conducted at or sponsored by Harvard, provide COMS-approved training as outlined in the COMS Training policy;

M. Hold an annual public meeting, in accordance with the Boston Public Health Commission Laboratory Regulation. The COMS encourages members of the public to attend this public meeting to learn more about the review process. To request attendance of a meeting, contact COMS@hms.harvard.edu.

Affiliated Institutions

The Affiliated Institutions recognize and agree that Harvard has the authority to establish policies and procedures that COMS shall follow in its initial and continuing review and approval of applications, proposals, and activities. For research conducted at or sponsored by an Affiliated Institution, the Affiliated Institution is responsible for ensuring that its laboratories and personnel are in compliance with all training and other safety requirements imposed by COMS or by federal, state, or local legislation or regulation. Specifically, each Affiliated Institution shall:

A. Establish and implement policies for the safe conduct of research involving CRM;

B. Appoint a Biological Safety Officer (BSO) with appropriate expertise to serve as the primary liaison between the Affiliated Institution and COMS. Provide appropriate training for the Biological Safety Officer;

C. For research conducted at or sponsored by the Affiliated Institution, provide appropriate training on laboratory safety and implementation of the NIH Guidelines to all Principal Investigators and laboratory staff;

D. For research conducted at or sponsored by the Affiliated Institution, establish mechanisms for having all research involving CRM reviewed by COMS;

E. For clinical trials conducted at or sponsored by the Affiliated Institution, establish mechanisms for compliance with the NIH Guidelines by all Principal Investigators (PIs) including, for example, the requirements that:
    1. All aspects of NIH Guidelines Appendix M must be appropriately addressed by any PI who is conducting human gene therapy trials;
    2. No research participant may be enrolled in a human gene transfer experiment until approval has been obtained from COMS, the local Institutional Review Board (IRB), and any other relevant regulatory bodies. If review by the NIH Recombinant DNA Advisory Committee (RAC) is initiated, COMS approval will be withheld until the RAC has concluded its review and COMS has considered the RAC's comments and recommendations.
F. For research conducted at or sponsored by the Affiliated Institution, determine the necessity for health surveillance of personnel involved in connection with individual CRM projects, and if appropriate, establish and maintain a health surveillance program for such projects. Such a program shall be required if personnel are:
    1. Engaged in large-scale research or production activities involving CRM that requires BL3 containment; or
    2. Engaged in animal research involving CRM require BL3 or greater containment.
G. For research conducted at or sponsored by the Affiliated Institution, follow the COMS Incident Reporting and COMS Clinical Trial policies;
H. For research conducted at or sponsored by the Affiliated Institution, provide training as outlined in the COMS Training policy.

Committee on Microbiological Safety (COMS)

As the IBC responsible for the review and approval of all research involving CRM to be conducted at or sponsored by Harvard or any of the Affiliated Institutions, COMS shall:

A. Maintain membership of no fewer than five members selected for their collective experience and expertise in recombinant or synthetic nucleic acid

molecules technology and for their ability to assess the safety of recombinant or synthetic nucleic acid molecules research and identify any potential risk to public health or the environment. COMS membership shall include:

1. At least two members not affiliated with Harvard or any of the Affiliated Institutions (apart from their membership on COMS) and who represent the interest of the surrounding community with respect to health and protection of the environment;
2. At least one individual with expertise in plants, plant pathogens, or plant pest containment principles when experiments fall under Appendix P, Physical and Biological Containment for Recombinant DNA Research Involving Plants;
3. At least one member representing Harvard's laboratory technical staff;
4. The Institutional BSO when an Affiliated Institution conducts recombinant or synthetic nucleic acid molecules research at BL3, BL4, or Large Scale (greater than 10 liters of biological culture);
5. On a rotating basis, Institutional BSOs from Affiliated Institutions that do not conduct recombinant or synthetic nucleic acid molecules research at BL3, BL4, or Large Scale (greater than 10 liters of biological culture);
6. Members with expertise and training in recombinant or synthetic nucleic acid molecules research involving human research participants;
7. Members with expertise in recombinant or synthetic nucleic acid molecules technology, biological safety, and physical containment;
8. Ad hoc members knowledgeable in institutional commitments and policies, applicable law, standards of professional conduct and practice, community, and the environment;
9. Ex officio members who provide expertise in institutional policy and procedures, biosafety, biosafety policy, or regulatory requirements to COMS. Ex officio members may also have an oversight role for some business operations of COMS or related business or compliance areas. Ex officio members do not have voting privileges unless these are temporarily assigned by the Chair or Vice-Chair at the start of a meeting

in order to ensure quorum. The ex officio member may decline the assignment.

B. Review CRM research conducted at or sponsored by Harvard or the Affiliated Institutions in accordance with the requirements set forth in the NIH Guidelines, approving only those research projects that are found to conform with the NIH Guidelines (as outlined in the COMS Protocol Review policy). Such review and approval may involve setting containment levels as specified in NIH Guidelines Sections III-D-4-b, Experiments Involving Whole Animals, and NIH Guidelines Section III-D-5, Experiments Involving Whole Plants;
C. Periodically review recombinant or synthetic nucleic acid molecules research conducted at or sponsored by Harvard or the Affiliated Institutions listed above to check compliance with the NIH Guidelines;
D. Ensure adequacy of emergency plans and procedures for addressing accidental spills and personnel contamination resulting from or related to CRM;
E. Follow the COMS Incident Reporting and COMS Clinical Trial policies.

Harvard COMS Office of Biological Safety

Harvard's COMS Office of Biological Safety, located at Harvard Medical School, bears administrative responsibility for COMS, and shall:

A. On behalf of all COMS-supported institutions, file an annual report with the NIH Office of Science Policy (OSP) that includes: (i) a roster of all COMS members clearly indicating the Chair, contact person, BSOs, plant expert (if applicable), animal expert, and experts in human gene therapy; and (ii) biographical sketches of all new COMS members.
B. Make available to the public all COMS meeting minutes and any documents submitted to or received from federal funding agencies that these agencies are required to make available to the public;
C. File an annual report with the Boston Public Health Commission (BPHC) which includes: (i) a list of recombinant or synthetic nucleic acid molecules studies approved by COMS; (ii) a roster of all COMS members; and (iii) minutes of COMS meetings.

D. File an annual report with the Cambridge Biosafety Committee (CBC) which includes: (i) a list of recombinant or synthetic nucleic acid molecules studies approved by COMS in the City of Cambridge; and (ii) a roster of all COMS members.
E. Notify Principal Investigators of the results of COMS review of their research proposals through each institutional biosafety officer;
F. Establish mechanisms for communication between COMS and the relevant Institutional Review Boards (IRB) and Institutional Animal Care and Use Committees (IACUC);
G. Ensure biological safety laboratory inspections occur in accordance with the COMS Laboratory Inspection policy;
H. Ensure reporting of laboratory incidents per COMS Laboratory Incident Reporting and Clinical Trial policies;
I. Maintain a secure electronic database for COMS protocol documentation;
J. Appropriately archive COMS records, including:
    1. Records of research projects reviewed by COMS;
    2. COMS minutes; and
    3. Other documents related to COMS activities.
K. Monitor national, state, and local regulatory trends and communicate any changes to the Biosafety Officers and responsible institutional representatives;
L. Develop CRM training materials.

Institutional Biological Safety Officers (BSOs)

Harvard and the Affiliated Institutions each are responsible for their own compliance with all training and other safety requirements imposed by COMS or by federal, state, or local legislation or regulation. To this end, the Institutional Biological Safety Officers (BSOs) shall, for their own institutions:

A. Assess the risk of proposed research applications and make recommendations to COMS as to appropriate containment, procedures, and personal protective equipment;
B. Oversee laboratory and vivarium inspections in accordance with the COMS Inspection policy;

C. Immediately report to COMS and their institution any significant problems, violations, or any significant research-related accidents or illnesses, as defined in the Incident Reporting policy;
D. Develop emergency plans and procedures for handling accidental spills and personnel contamination and investigating laboratory accidents resulting from or related to CRM;
E. Provide advice and guidance on laboratory security;
F. Provide technical advice and guidance to PIs and COMS on research safety procedures;
G. Monitor:
    1. Institutional Animal Care and Use Committee (IACUC) applications;
    2. Institutional Review Board (IRB) applications;
    3. Institutional Material Transfer Agreements (MTAs); and
    4. Grants & Contracts Office submissions.

Principal Investigators

Principal Investigators are responsible for performing research in compliance with all federal, state, local and institutional (including COMS) safety regulations. For the purposes of COMS registration, principal investigators should have a faculty appointment at Harvard University, or meet their institutional definition of a principle investigator. Core facility directors may also serve as Principal Investigators for COMS registration. Non-faculty members may be designated as the Principal Investigator for COMS registration following approval from COMS Leadership (in consultation with the institution) and with the consent of the full COMS committee.

A. In general, a PI shall:
    1. Obtain COMS approval before purchase, receipt, storage, initiation, or modification of any and all research involving CRM;
    2. Immediately report any significant problems, violations, or any significant research-related accidents or illnesses to his or her Institutional BSO, and work with COMS to report to applicable

governmental agencies, following the COMS Incident Reporting and Clinical Trial policies;

3. Make sure that he or she has received adequate training on good microbiological techniques;
4. Adhere to institutional emergency plans and procedures for handling accidental spills and personnel contamination resulting from or related to recombinant or synthetic nucleic acid molecules or infectious agent research;
5. Comply with all applicable shipping requirements for CRM.

B. Before initiating research involving CRM, the PI shall:

1. Make an initial determination of whether the project involves recombinant or synthetic nucleic acid molecules or Dual Use Research of Concern;
2. Make a determination as to the required levels of physical and biological containment in accordance with the NIH Guidelines;
3. Select appropriate microbiological practices and laboratory techniques to be used for the research;
4. Working with the institutional BSO as appropriate, instruct and train laboratory staff in: (i) protocol; (ii) practices and techniques required to ensure safety; and (iii) the emergency plans and procedures for handling accidental spills and personnel contamination resulting from or related to CRM research.
5. Educate laboratory staff about the reasons and provisions for any precautionary medical practices advised or requested (e.g., vaccinations or serum collection);
6. Working with the institutional BSO, address all aspects of NIH Guidelines Appendix M prior to submission of a human gene transfer experiment to NIH OSP (See COMS Clinical Trial policy).

C. During the conduct of research involving CRM, the PI shall:

1. Supervise the safety performance of the laboratory staff to ensure that the required safety practices and techniques are employed;

2. Investigate and report any significant problems pertaining to the operation and implementation of containment practices and procedures as outlined in the COMS Incident Reporting policy;
3. Immediately report to the institutional BSO any work errors or conditions that may result in the release of CRM and work with the institutional BSO to correct any such errors or conditions;
4. Ensure the integrity of the physical containment (e.g., biological safety cabinets) and the biological containment (e.g., purity and genotypic and phenotypic characteristics) for CRM.