Brookline Department of Public Health and Human Services
Regulations on the Use of Recombinant and Synthetic Nucleic Acid Molecules and Regulated Biological Agents

APPLICABILITY

All activities associated with constructing and/or propagating: a) recombinant and/or synthetic nucleic acid molecules b) organisms and viruses containing recombinant and/or synthetic nucleic acid molecules within the Town of Brookline and (c) regulated biological agents having a containment of Biosafety Level One (BSL-1) or Two (BSL-2) shall be performed in strict accordance with these regulations and with Guidelines, as defined below. The regulations shall govern where they differ from the Guidelines. These regulations do not apply to finished products which contain recombinant and/or synthetic nucleic acid molecules and which have been approved by other government regulatory agencies for medical or other purposes. Organisms requiring BSL-3 or higher physical containment measures are not permitted in the Town of Brookline.

DEFINITIONS

For the purpose of these regulations, the following definitions are adopted:

Brookline Biosafety Advisory Council (BBAC):
A council of Brookline employees and citizens that advises and supports the Brookline Department of Health and Human Services (DHHS) on all registrations and permit applications. The Council also advises in the administration of Town regulations and oversight of research laboratory/ life science operations in Brookline.

Biosafety Level (BSL):
Physical containment as defined in Appendix G-II
(Physical Containment Levels) of the latest amendment of the NIH Guidelines
and the latest edition of BMBL.

Biosafety Level 1 (BSL-1)
Biosafety Level 1 (BSL-1) is suitable for work involving well-characterized agents not known to consistently cause disease in immunocompetent adult humans and that present minimal potential hazard to laboratory personnel and the environment. BSL-1 laboratories are not necessarily separated from the general traffic patterns in the building. Work is typically conducted on open benchtops using standard microbiological practices. Special containment equipment or facility design is not generally required but may be used as determined by appropriate risk assessment. Laboratory personnel receive specific training in the procedures conducted in the laboratory and are supervised by a scientist with training in microbiology or a related science.

Biosafety Level 2 (BSL-2)
Biosafety Level 2 (BSL-2) builds upon BSL-1. BSL-2 is suitable for work with agents associated with human disease and pose moderate hazards to personnel and the environment. BSL-2 differs from BSL-1 primarily because: 1) laboratory personnel receive specific training in handling pathogenic agents and are supervised by scientists competent in handling infectious agents and associated procedures; 2) access to the laboratory is restricted when work is being conducted; and 3) all procedures in which infectious aerosols or splashes may be created are conducted in BSCs or other physical containment equipment.

Biosafety Level 3 (BSL-3):
Classification of the level of biological containment required for certain organisms categorized as "BSL-3" in the most recent version of the CDC/NIH Publication: "Biosafety in Microbiological and Biomedical Laboratories (BMBL). These organisms typically contain a risk by aerosol transmission and the diseases produced by these agents are serious but treatable. Additional facility requirements as well as administrative and engineering controls are required for their safe use. Organisms requiring BSL-3 or higher physical containment measures are not permitted in the Town of Brookline.

Biological Risk Group (RG):
The Risk Group for any biological pathogen as defined in subsection II-A-1 (Risk Groups) of the latest amendment of the NIH Guidelines and as specified in the latest edition of the BMBL. This designation pertains to the natural risk to human health and the likelihood of transmission associated with the unaltered form of that biological agent.

Exempt Recombinant DNA Experiments:
As defined in the "NIH Guidelines", Section III-F (Exempt Experiments), those experiments (e.g. research with E. coli K-12) that are not subject to those guidelines, but are subject to the practices and standards provided by the CDC/NIH joint publication of the Biosafety in Microbiological and Biomedical Laboratories. These experiments shall be reviewed by the Institutional Biosafety Committee and shall be registered with the Director of Public Health and Human Services.

Guidelines:
(1) The most recent version and any additional approvals of the National Institutes of Health Guidelines for Research Involving recombinant and/or synthetic nucleic acid molecules published in the Federal Register.

(2) The most recent version and any additional approvals of the Biosafety in Microbiological and Biomedical Laboratories (BMBL).

(3) In the event that the National Institutes of Health shall discontinue or abolish their guidelines, those guidelines in effect and approved by the Brookline Department of Public Health and Human Services at the time of such discontinuance shall remain in effect.

Institution*:*

Any public or private entity including Federal, State, and local governmental agencies.

Institutional Biosafety Committee (IBC):
A committee that (i) meets the requirements for membership specified in the Guidelines and (ii) reviews, approves, and oversees projects in accordance with the responsibilities as defined in the Guidelines. Members are appointed by the institution and a roster must be submitted to the DHHS as part of the initial and annual renewal application. Community members are appointed by the institution and must be approved by the Director of Public Health and Human Services.

Large-scale:
The use of more than ten liters but less than 5000 liters of recombinant and/or synthetic nucleic acid culture.

Principal Investigator:
An individual who has primary responsibility for the design, execution, and management of a research project and who will be involved in the project in a significant manner. The Principal Investigator is responsible for full compliance with the Guidelines and for ensuring that all reporting requirements are fulfilled.

Regulated Biological Agents:
Any microorganisms including, but not limited to, mammals, plants, bacteria, viruses, fungi, rickettsiae or protozoa, or any naturally occurring, bioengineered or synthesized component of any such microorganism or infectious substance that is:

(1) used in Biosafety Level One or Two Laboratories only
(2) identified as any "Recombinant and Synthetic Nucleic Acid Molecule" in Section I-B (Definition of Recombinant DNA Molecules) of the most recently adopted revision of the NIH Guidelines, defined below under "Guidelines"; or,
(3) identified by the United States Department of Health and Human Services ("DHHS") or the United States Department of Agriculture ("USDA") as a "Select Agent" (as defined below) Risk Group 1 or 2 agent.

Select Agent:
Any microbial and toxic agents listed at 42 Code of Federal Regulations (CFR) Part 73 and 9 CFR Part 121 and the rulings made by the CDC and the USDA relative thereto, as such regulations and rulings may be amended from time to time. However, Select Agent shall not include any de minimus number of agents or toxins which are excluded from 42 CFR 73 and 9 CFR Part 121.

Significant deviation:
Any deviation that might have an adverse effect on personal or public health.

ROLES AND RESPONSIBILITIES

Director of Public Health and Human Services
The Director of Public Health and Human Services shall oversee all uses of recombinant and/or synthetic nucleic acid and/or regulated biological agents in Brookline.

(1) Establishing policies, procedures and criteria to aid in the implementation of this regulation. These policies and procedures shall include public engagement in the BBAC meeting process.

(2) Reviewing all applications for permits for the use of recombinant and/or synthetic nucleic acid and/or regulated biological agents in Brookline for compliance with the Guidelines and conformity with such other regulations as the Brookline Department of Public Health and Human Services may from time to time promulgate.

(3) Reviewing institutions' manuals, annual worker training programs, health-safety programs and monitoring procedures.

(4) Establish a permit application procedure. Review such reports, applications and recommendations and approving where appropriate. Carrying out or designating a consultant to review registration and/or permit applications and/or conduct site visits to institutional facilities.

(5) Issue the permits approved.

(6) Maintain an electronic filing system for all registrations and permits.

(7) Approve the community members of the Institutional Biosafety Committees (IBCs) who are appointed by the IBC chair at each respective institution.

(8) Develop a reporting procedure to report violations of these regulations.

(9) Appoint the members of the BBAC.

(10) Contract a suitable biosafety consultant, as needed, to advise the BBAC and Director of Public Health and Human Services with application review and inspections.

Brookline Biosafety Advisory Council (BBAC)
Specific responsibilities of the BBAC are as follows:

(1) Advise on policies, procedures and criteria to aid in the implementation of this regulation. These policies and procedures shall include public engagement in the BBAC meeting process.

(2) Advise on all applications for permits for the use of recombinant and/or synthetic nucleic acid and/or regulated biological agents in Brookline for compliance with the Guidelines and conformity with such other regulations as the Brookline Department of Public Health and Human Services may from time to time promulgate.

(3) Advise on institutions' manuals, annual worker training programs, health-safety programs and monitoring procedures.

(4) Advise on the manner in which institutions and institutional biosafety committees make reports, applications or recommendations to the Brookline Department of Public Health and Human Services and the type of information required. Reviewing such reports, applications and recommendations and approving where appropriate.

Membership of the BBAC
Pursuant to the Regulation, the advisory council will consist of five (or up to seven) members, including:

- Advisory Council on Public Health Chair or designee,
- Director of Public Health and Human Services or designee,
- One hazardous materials advisor appointed jointly by the Director of Public Health and Human Services and the Fire Chief, and
- Two (or up to four) Brookline residents with relevant training and experience in the areas of biotechnology, occupational health, infectious disease, and/or environmental health, to be appointed by the Director of Public Health and Human Services

INSTITUTIONAL BIOSAFETY COMMITTEE (IBC)
The IBC is responsible for reviewing and setting containment for all work with regulated biological agents and recombinant or synthetic nucleic acids at the institution.

(1) The Institutional Biosafety Committee (IBC), established by the Guidelines, shall have as members, in addition to the corporate representatives, one community representative of the Town of Brookline, who shall report back to the Director of Health, or his/her designee. The community representative shall be appointed by the facility holding the permit and notification of the requested community appointment along with the resume should be sent to the Director of Public Health and Human Services. The Director of Public Health and Human Services

will approve all appointments.

(2) The IBC shall meet a minimum of at least once per year. All approved minutes of the IBC meetings must be forwarded to the BBAC.

(3) The community member of the IBC shall have no financial interest in the institution or any other institution in competition therewith, and such representatives shall be bound to the same provisions as to non- disclosure and non-use of proprietary information and trade secrets as all other members of IBC, except to the extent necessary to alleviate any public health hazard. As used in this regulation, proprietary information and trade secrets shall be defined as set forth under the laws of the Commonwealth of Massachusetts.

(4) In accordance with the Guidelines the IBC, acting on behalf of the institution, reviews all recombinant and/or synthetic nucleic acid and regulated biological agents use for compliance with the Guidelines and approves those projects that conform with the Guidelines. A description of each protocol approved by the IBC, including all organisms and the containment to be used, and a statement certifying the experiment conforms with the Guidelines, shall be filed with the Director of Public Health and Human Services as part of the permit application process.

.

(5) All information sent to the Director of Public Health and Human Services shall have any proprietary information trade secrets removed therefrom. The full text shall remain on file in the records of the institution for inspection at all reasonable times by any member of the IBC.

REGISTRATION

Recombinant and/or synthetic nucleic acid molecules users in the following categories: Both (1), (2) and (3) are required to register proposed work with the Director of Public Health and Human Services

(1) Users whose experiments are all exempt from the NIH Guidelines under Section III-F;
(2) Users not constructing recombinant and/or synthetic nucleic acid organisms but merely propagating them; and
(3) Users storing these materials in the laboratory but not actively conducting research.

Written registration is required prior to commencement of work and includes:

- Name and resume of a person in the organization familiar with the proposed recombinant and/or synthetic nucleic acid work and the NIH Guidelines.
- A brief summary from the above-named person describing the proposed work
- Name and type of organisms (host/donor [foreign DNA]/vector) being used.
- Reference to the section of the NIH Guidelines where the work falls.
- If recombinant molecules containing eukaryotic viruses are propagated in cells, give the approximate percentage of the viral genome present.
- The scale (in liters) on which the organisms will be grown.
- An assurance that all work will be carried out following the NIH Guidelines, where applicable, at the appropriate BL level and that exempt work will be done at BL1.
- Waste Monitoring: A plan for systematic monitoring of waste to assure that surviving recombinant and/or synthetic nucleic acid organisms and/or regulated biological agents will not be released into the environment. This shall include the name of biological waste handler and written assurance that all waste will be disposed of according to all applicable federal, state, and local codes. All waste disposal will be done in accordance with 105 CMR 480.000, Chapter VIII, State Sanitary Code, Storage and Disposal of Infectious or Physically Dangerous or Biological Waste.
- Description of annual safety training and refresher training provided to laboratory staff along with annual training records.
- Pest Control Plan: A plan for systematic pest control management in laboratories, contiguous facilities and food service establishments in the same building.
- Security Plan: A plan for systematic security of the premises.
- Plot Plan: A plot plan showing the proposed location of the facility and a floor plan showing the internal layout of the facility.
- Safety manuals: The institution's health monitoring, health surveillance and safety manuals, together with the plan for an appropriate medical surveillance program as determined by the IBC for all persons engaged in the use of recombinant and/or synthetic nucleic acid and/or regulated biological agents.

- Emergency Responders: A plan for orienting representatives of the Brookline Health, Fire and Police Departments to the physical plant and to procedures to be utilized in the event of an emergency.
- Written agreement to allow inspection of facilities and pertinent records by a member of the Director of Public Health and Human Services or their designee.
- Upon receiving and reviewing the submitted information, the Director of Public Health and Human Services may require additional information to be submitted.

ANNUAL REPORTS

Annual reports are required every fiscal year. The report must include the following:

- A summary of the work performed over the past year and addressing any ongoing work according to the format given in 2 above.
- A registration fee is due for all initial applications and annual renewals.
- Training content and verification of annual training is provided.
- Any updates in the past year to the documents provided in the above section titled "REGISTRATION."
- Written agreement to allow inspection of facilities and pertinent records by the Director of Public Health and Human Services or their designee.

INCIDENT REPORTING

Immediate reporting to the Director of Public Health and Human Services any employee exposure or illness, facility spill, release or explosion that could be potentially related to the use of recombinant and/or synthetic nucleic acid and/or regulated biological agents used on site. The administrative officials at the registered facility must provide an initial report to the Town of Brookline, Director of Public Health and Human Services, within 2 days of the potential exposure or release. A formal accident report containing details of the accident, laboratory decontamination and follow-up of the potentially exposed personnel should be submitted to the Director of Public Health and Human Services. The Director of Public Health and Human Services requires a written report within 30 days following the verbal report. Submitting written reports before the deadline is encouraged. A determination as to whether there was a release of recombinant and/or synthetic nucleic acid or regulated biological agent material should also be addressed to the Director of Public Health and Human Services.

PERMITS

A) All institutions planning to use recombinant and/or synthetic nucleic acid [in any way other than those described in the Registration] or regulated biological agents in research and manufacturing that requires Biosafety Level One or Two containment must obtain a permit from the Brookline Department of Public Health and Human Services. All institutions planning to use recombinant and/or synthetic nucleic acid in any way other than those described in the Registration must obtain a permit from the Brookline Department of Public Health and Human Services before commencing said technology. All permits are issued for one year and may be revoked for cause.

B) Institutions seeking such a permit from the Director of Public Health and Human Services must first submit the following documents as part of their permit application:

- Name and resume of a person in the organization familiar with the proposed recombinant and/or synthetic nucleic acid work and the NIH Guidelines.
- A brief summary from the above-named person describing the proposed work
- Name and type of organisms (host/donor [foreign DNA]/vector) being used.
- Reference to the section of the NIH Guidelines where the work falls.
- If recombinant molecules containing eukaryotic viruses are propagated in cells, give the approximate percentage of the viral genome present.
- The scale (in liters) on which the organisms will be grown.
- An assurance that all work will be carried out following the NIH Guidelines, where applicable, at the appropriate BL level and that exempt work will be done at BL1.
- Waste Monitoring: A plan for systematic monitoring of waste to assure that surviving recombinant and/or synthetic nucleic acid organisms and/or regulated biological agents will not be released into the environment. This shall include the name of biological waste handler and written assurance that all waste will be disposed of according to all applicable federal, state, and local codes. All waste disposal will be done in accordance with 105 CMR 480.000, Chapter VIII, State Sanitary Code, Storage and Disposal of Infectious or Physically Dangerous or Biological Waste.
- Description of annual safety training and refresher training provided to laboratory staff along with annual training records.
- Pest Control Plan: A plan for systematic pest control management in laboratories, contiguous facilities and food service establishments in the same building.
- Security Plan: A plan for systematic security of the premises.
- Plot Plan: A plot plan showing the proposed location of the facility and a floor plan showing the internal layout of the facility.
- Safety manuals: The institution's health monitoring, health surveillance and safety manuals, together with the plan for an appropriate medical surveillance program

as determined by the IBC for all persons engaged in the use of recombinant and/or synthetic nucleic acid and/or regulated biological agents.

- Emergency Responders: A plan for orienting representatives of the Brookline Health, Fire and Police Departments to the physical plant and to procedures to be utilized in the event of an emergency.
- Written agreement to allow inspection of facilities and pertinent records by a member of the Director of Public Health and Human Services or their designee.
- Upon receiving and reviewing the submitted information, the Director of Public Health and Human Services may require additional information to be submitted.
- Institutional Biosafety Committee (IBC)

The following documents must be submitted with the initial permit application and annually thereafter:

  - Roster of IBC Members
  - Resume of each IBC member
  - Approved minutes from the past year

C) The Director of Public Health and Human Services or their designee shall review the institution's application for a permit and supporting documents and make its recommendation copies of the application, supporting documents and the recommendation shall be filed within 45 days after the application is submitted.

D) The fee for a permit or annual renewal granted by the Director of Public Health and Human Services must be paid annually.

ANNUAL REPORTS

Annual reports are required every fiscal year. The report must include the following:

- Current roster of IBC members
- Copies of the previous year's approved IBC minutes
- A summary of the work performed over the past year and addressing any ongoing work according to the format given in 2 above.
- A permit fee is due for all initial applications and annual renewals.
- Training content and verification of annual training is provided.
- Any updates in the past year to the documents provided in the above section titled "PERMIT."
- Written agreement to allow inspection of facilities and pertinent records by the Director of Public Health and Human Services or their designee.
- Annual report deadlines will be due on April 1st of each fiscal year and permit fees must be paid at that time.

INCIDENT REPORTING

Immediate reporting to the IBC Chair of any employee exposure or illness, facility spill, release or explosion that could be potentially related to the use of recombinant and/or synthetic nucleic acid and/or regulated biological agents used on site from an approved IBC protocol. The IBC Chair should consult with the administrative officials at the permitted facility and provide an initial report to the Director of Public Health and Human Services, within 2 days of the potential exposure or release. A formal accident report containing details of the accident, laboratory decontamination and follow-up of the potentially exposed personnel should be submitted to the

Town of Brookline Director of Health requires a written report within 30 days following the verbal report. Submitting written reports before the deadline is encouraged. A determination as to whether there was a release of recombinant and/or synthetic nucleic acid material should also be addressed to the Director of Public Health and Human Services

INSPECTION AND REVIEW

(1) All institutions involved in the use of recombinant and/or synthetic nucleic acid and regulated biological agents as described in Registration and Permits, shall allow annual inspection of their facilities, procedures and practices in order to confirm compliance with this regulation.
(2) The Director of Public Health and Human Services shall retain a professionally competent person, agency or institution to perform inspections and reviews. The results shall be reported to the Director of Public Health and Human Services and the institution involved.
(3) The Brookline Department of Public Health and Human Services its employees, and any individual or institution employed to perform inspections shall maintain the confidentiality of all proprietary information released to them by reason of this regulation.

RESTRICTIONS

(1) Recombinant and/or synthetic nucleic acid and/or regulated biological agents classified by the guidelines as requiring BL3 or BL4 physical containment measures shall not be permitted in the Town of Brookline.
(2) Experiments for which containment levels are not prescribed in the Guidelines shall be reviewed by the IBC and final approval is issued by the Director of Public Health and Human Services before the experiment is initiated.
(3) Use of more than 5,000 liters of recombinant and/or synthetic nucleic acid culture shall not be permitted, unless a variance is obtained by the institution issued from the Director of Public Health and Human Services. There shall be no deliberate release into the environment, that is to sewers, drains, or the air, of any organisms containing recombinant and/or synthetic nucleic acid.
(4)) Retention of medical and health records for at least ten years. Medical or employee health records shall be made available for inspection and may be used for public health studies.

VIOLATIONS AND PENALTIES

Violation of the conditions of these regulations shall subject the violator to a fine of five hundred dollars ($500.00) *per day* and in addition the facility in which the violation occurs may be closed by the Director of Public Health and Human Services. Each day of violation shall constitute a separate and distinct offense.

Violation of the provisions of these regulations shall subject the violator to fines according Brookline Town By-laws.

b) Once a permit has been issued or a registration filed, it may be revoked by the Director of Public Health and Human Services upon determination, after due notice and hearing, that the institution involved has materially failed to comply with these regulations, the permit agreements or the guidelines or if in the opinion of the Director of Public Health and Human Services the recombinant and/or synthetic nucleic acid and/or regulated biological agent use causes a nuisance, or adversely affects the public health, safety and welfare in Brookline.

ASSESSMENT OF EXPENSES

The salaries and expenses paid by the Town for inspections, reviews, staff and consultants for work directly related to carrying out the requirements of these regulations shall be assessed to the institutions holding permits under these regulations. An accounting of these costs will be furnished annually to each institution.

SEVERABILITY

Each part of these regulations is construed as separate to the end, and that if any section, item, sentence, clause or phrase is held invalid for any reason, the remainder of these regulations shall continue in full force and effect.

VARIANCES

The Director of Public Health and Human Services may vary the application of any provision of these regulations with respect to any particular case when, in its opinion, the enforcement thereof would do manifest injustice, provided that the decision of the Director of Public Health and Human Services is not in conflict with the spirit of these standards. Variances from these Regulations may be authorized after notice and public hearing, if the Director of Public Health reasonably determines that the relief sought will not be detrimental or injurious to the public health. Any variance granted by the Director of Public Health and Human Services must be in writing with a copy available to the public at all reasonable hours in the Office of the Town Clerk and in the Brookline Department of Public Health and Human Services.