



Indian Institute of Science, Bangalore

Office of Laboratory Safety and Environmental Health (OLSEH)

# Policy on Laboratory Safety and Environmental Health

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Indian Institute of Science (IISc) is committed to the health and safety of all on both its campuses. The purpose of this policy is to establish responsibility of the various stakeholders towards this goal. This policy applies to all activities, including research, teaching, incubation, and external projects. Further, this policy applies to all employees, students, visitors, and contract workers.

The policy is based on the following Directive Principles:

- I. Safety is paramount: Safety for all on IISc premises is the primary concern. All activities, including research and teaching, must be conducted without compromising safety.
- II. Accountability: Any person having access to any equipment or material housed in the Institute campus(es) must take personal responsibility for his/her actions/omissions and ensure adherence to highest standards of safety.
- III. Trust but also Verify: The Institute recognizes that for a diverse institute with more than 40 departments, and a huge variety of research being conducted, there is a diversity of hazards and attendant risks. The persons responsible for setting up the facilities and guiding the experiments, are expected to be aware of the hazards and risks, and are entrusted with taking the necessary safety precautions. The role of the Safety Committee is primarily to set the safety policies, while the role of the Office of Laboratory Safety and Environmental Health (OLSEH) is to implement these policies and monitor compliance. The Institute requires Departments to implement the policies in letter and spirit and reserves the right to verify compliance.

## 1 Definitions

*“Institute”* means the Indian Institute of Science including any of its extended campuses.

*‘Laboratory’* refers to a room or space or field used for research, teaching, measurement, or operations. Often laboratories are fraught with chemical, radiation, biological, radiological or other hazards. For the purposes of this policy, the term includes the pathway where material is carried from one laboratory to another. It also includes storage and preparatory spaces.

*‘Office of Laboratory Safety and Environmental Health (OLSEH)’* is an office approved by the Council consisting of Environment Health and Safety (EHS) Officers to implement Safety Policies.

*‘Safety Committee’* is a Committee consisting of faculty members/staff nominated by the Director to oversee and supervise the OLSEH and to formulate Safety Policies for the Institute.

*'Department Safety Champion'* is a designated permanent staff of sufficient authority that is appointment by the Department Chair (or Centre Chair) to oversee safety in a Department/Centre Every Department/Centre must have a Safety Champion.

*'Employee'* includes any person employed at the Institute premises, either directly or through an agent. It includes anyone working on the premises, whether on remuneration, stipend, or voluntarily. It includes temporary and/or contract employees, whose terms of employment are expressed or implied. It includes faculty members, whether tenured or on contract, contract workers, post-doctoral scholars, research associates, probationers, project staff, trainees and interns.

*'Principal Investigator' or PI*, is an Employee, often faculty or scientific staff member, under whose supervision an experiment or any other activity is being undertaken in a laboratory.

*'Users'* include any person using the laboratory, equipment, research infrastructure and other facilities on the Institute premises. Often, these would be employees and students. Users can also be short-term and long-term visitors, including, foreign exchange students, visiting faculty, collaborators, interns, parent / sponsor institutions, employees of companies and individuals who temporarily access facilities at the Institute under any arrangement.

*'Contractor'* are entities or people who render services; provide work; or supply contract labour; to the Institute. This includes the tiers of sub-contractors who may be employed by the contractor.

*'Incident Report'* is a written account of emergency evacuation, emergency alarm trigger, injury, or accident that occurs in a Department/Centre. Incident Reports must contain a description of the event, preliminary investigation into the cause, prima-facie cause and recommendations to prevent such incidents in the future.

*'Emergency Response Plan'* a clear and sequential plan that prescribes the actions and actors during an emergency. The plan is drafted by each Department Safety Champion in consultation with OLSEH.

*'Emergency Response Team'* a team drafted by the Department Safety Champion, tasked with supervising an emergency in a Department/Centre.

- 2 “*Safety Rules*” means the rules laid down by OLSEH or IISc Safety Committee that must be followed by all “Users”. These rules will be listed on the OLSEH website and are subject to revision from time to time. All users must abide by the Safety Policy and Safety Rules and will be responsible for their actions/omissions. IISc Safety Committee

The IISc Safety Committee will consist of faculty, staff, and other personnel as per the relevant norms. The primary role of this committee is to:

- a. review this policy from time to time and suggest modifications, if any, required.
- b. oversee activities of OLSEH with respect to effective implementation of safety policies and advise them from time to time.

### 3 Office of Laboratory Safety and Environmental Health (OLSEH)

Institute has established the Office of Laboratory Safety and Environmental Health (OLSEH) to be the primary body responsible for effective implementation of workplace, environmental, laboratory safety across the institute. OLSEH shall report to the Institute Safety Committee. The OLSEH will comprise EHS Officers and Senior Personnel. OLSEH shall:

- a. conduct periodic risk assessment of all activities, equipment, buildings, policies, procedures, training, and manuals across the institute. These include but are not limited to, research activities; department buildings; and student housing; contractor and vendor regulations; and waste and effluent treatment.
- b. take *suo moto* notice of any safety issue and investigate.
- c. bring to the notice of the Safety Committee, any hazards observed during assessments or investigations, in the form of a report, along with recommendations to reduce, eliminate and contain the said hazards.
- d. provide recommendations on safety policies and actions to the Safety Committee. The recommendation can include, but are not limited to, rules for personal protective gear, standard operation procedures, waste disposal, storage, emergency response, and incident reporting. In extreme cases of non-compliance as outlined in this Policy, OLSEH can recommend closure of laboratories/facilities. The OLSEH can recommend scrapping of faulty or obsolete equipment on the request of the PI.
- e. conduct scheduled and spot audits to ensure that all Safety Policies prescribed by the Safety Committee are being followed in letter and spirit across the Institute. To conduct the audits, OLSEH has a right to demand complete and unfettered access to all spaces across the Institute.

- f. inform the Safety Committee of any breach of any prescribed Safety Policy or Safety Rules by any User, on the Institute campuses.
- g. periodically review this Safety Policy and submit any proposed changes to the Safety Committee for approval. Once approved, OLSEH shall communicate the said changes to all the stakeholders within a reasonable amount of time.
- h. implement any directions of the IISc Safety Committee. This may include technical advice, implement policies, conduct investigation, procure information, and follow-up on action items.
- i. ensure that Institute has all the required statutory approvals from state and central governments and regulatory agencies.
- j. assist the PI in obtaining the required equipment/facility-specific statutory approvals from state and central governments and regulatory agencies.
- k. serve as the primary point of contact for the Institute to all regulatory agencies and governmental departments.
- l. facilitate any external safety audits mandated by regulatory agencies or appointed by the Safety Committee from time to time.
- m. solicit the Safety Committee for funds to improve the safety infrastructure in the institute.
- n. serve as the primary source of contact for Department Safety Champions, on behalf of Safety Committee.
- o. compile the biannual self-audit reports from Safety Champions of individual Departments.
- p. maintain a list of Department Safety Champions, along with their emergency contacts.
- q. maintain a record of all safety incident reports generated by the Department Safety Champions.
- r. serve notices to Users/Pis in case of violations in accordance with this Policy.
- s. will coordinate with campus security, Health Centre, and CCMD to provide the necessary support for ensuring safety in the campus.

#### 4 Department Safety Champion

Each department or centre shall have a designated Safety Champion, who must be an Employee from the cadre of faculty or scientific staff with sufficient authority. The Safety Champion will be appointed by the department Chair and informed to OLSEH. The Safety Champion shall:

- a. be the primary point of contact at a Department/Centre, for Safety Committee and OLSEH
- b. be responsible for identifying and informing the OLSEH of any unrecognized hazards in the department.
- c. maintain a list of Principal Investigators for all laboratories, along with their emergency contacts.

- d. maintain records of the biannual safety-audits required from each Principal Investigator. Also, the Safety Champion must compile the biannual self-audits into a report that must be communicated to the OLSEH every six months.
- e. conduct investigation into any safety complaint received from users. If appropriate, the issue can be escalated to the IISc Safety Committee and OLSEH.
- f. generate and maintain records of Safety Incident Reports. A copy of these must be sent OLSEH and shared with the Department members.
- g. establish an Emergency Response Plan for the department as per the norms established by the Safety Committee. This may include fire prevention, fire alarms, emergency evacuation, assembly points, and emergency response.
- h. educate the department community about the Emergency Plan in a mandatory safety session and a surprise emergency drill, to organized at least once every year.
- i. establish an emergency response team responsible for overseeing any emergency response. A subset of ERT must be on call 24x7, to respond to an emergency. ERT must ensure complete evacuation, offer technical advice to first responders, inform OLSEH, inform Security Officer, call Emergency vehicles, and manage assembly points. The ERT is expected to understand the safety hazards in the Department. The ERT is also the only authority capable of declaring an “*all-clear*”.

## 5 Principal Investigator

All laboratories must have a supervising ‘*Principal Investigator*’ or *PI*. Typically, this will be a faculty member, scientific officer, or senior project staff. The PI is entrusted with safety and well-being of all Users and Contractors in their laboratory. The PI shall:

- a. be responsible for implementing the safety policies, prescribed by the OLSEH in their respective laboratories. Any exceptions sought for must be approved by the OLSEH.
- b. be responsible for arranging funds to implement the safety policies prescribed by the OLSEH. This includes, but not limited to, funds for personal protective equipment; safety detectors; storage cabinets; fume hoods; gas cabinets; signage; first aid boxes; and fire exits, as and when appropriate.
- c. appoint a laboratory safety monitor. This could be a senior research student, project staff or scientific/technical staff member.
- d. ensure prominent display of the laboratory plan listing hazards and entry/exits as per the format specified by OLSEH.
- e. develop well-documented safety protocols for non-standard equipment/facilities and ensure all users are trained in such protocols.
- f. respond to any request for safety infrastructure or complaints made by the Users in their laboratory.

- g. provide a structure to appropriately train Users in their Laboratory to manage hazards in the Laboratory. The structure must be comprehensive and designed with a 'reasonable' User in mind.
- h. monitor the entry of personnel into their labs such that only people with appropriate safety training are exposed to lab hazards. Conversely, people who cannot have such training must be excluded from labs.
- i. conduct a biannual safety audit of their laboratories. The results of the self-audit should be comprehensive and, in the format, prescribed by the OLSEH.
- j. submit the following statement to the Registrar for all new projects:

*“Risk assessment has been done for these planned activities. Infrastructure to conduct the activity safely is either existing in the lab or built into the funding structure of the current proposal.”*

## 6 Users

All Users shall:

- a. be personally responsible for their own safety.
- b. follow the Safety Rules prescribed by the Safety Committee and/or PI.
- c. undergo training in laboratory protocols and emergency responses
- d. understand potential hazards in their respective laboratories and act in a way to minimize the risk associated with those hazards.
- e. not indulge in any activities that in their assessment can pose a threat to themselves or others in the Institute premises, even if directed by the PI.
- f. inform the Department Safety Champion of any coercion to violate safety norms. These reports will be kept confidential. In extreme cases, information will need to be provided to the OLSEH or Safety Committee.
- g. strictly adhere to the safety practices and standard operating procedures established for the laboratories they work in. All Users are expected to be trained and tested in these practices and procedures before starting work in the laboratory to which they are assigned, and must undergo retraining and testing at regular intervals. Serious violations might lead to exclusion of the Users from the laboratory for a specified period or indefinitely.

## 7 Consequences of Non-compliance and Indemnity

Any violation of this Safety Policy or Safety Rules will be handled as follows:

1. For a first-time violation, OLSEH will send a *white notice* to the responsible Principal Investigator, with a time frame for remedial action based on the severity of the violation.

2. If the violation is not remedied within the timeframe, OLSEH will send a *yellow notice* to the responsible Principal Investigator with an insistence for immediate action.
3. In case of non-compliance, even after a yellow notice, OLSEH will send a *red notice* to the offending Principal Investigator, ordering a temporary closure of the laboratory/facility until the violation remedied.
4. In cases of severe violations requiring immediate remedial action, the OLSEH office may directly issue a yellow or red notice.
5. In the event of damage to property or other loss caused to the Institute due to violation of the Safety Policy or Safety Rules, the User/s shall fully indemnify the Institute and hold the Institute harmless against all loss, injury and damage. In addition, the Institute reserves the right to claim damages/compensation for loss caused by the actions/omissions of the User in breach of the Safety Policy or Safety Rules.

## 8 Acknowledgement

Lack of attention to sound safety practices can lead to loss of property, compromising years of painstaking research, serious injury and loss of life. The Institute, therefore, considers it the duty of all individuals to adhere to this Safety Policy and the attendant Safety Rules published on the OLSEH website.

All faculty, staff, and registered students of the institute are expected to have read and understood this Safety Policy, and to agree to work towards adopting a strong culture of safety.

Visitors, short-term and long-term users, such as foreign exchange students, visiting faculty, collaborators, interns, employees of companies and individuals who temporarily access facilities at the Institute under any arrangement need to acknowledge the safety policy as below.

I hereby acknowledge that I have read the '*Policy on Laboratory Safety and Environmental Health*' and understand my responsibilities under this Policy.

Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Department: \_\_\_\_\_

Purpose of Stay: \_\_\_\_\_

Date: \_\_\_\_\_