DIVISION III Safety Regulations

POLICY STATEMENT

Centre College is fully committed to providing a properly designed and equipped environment in which science instruction and research can be safely conducted. The personal safety of our faculty, staff, and students is of utmost importance. Our role in assuring that Centre is a safe environment in which to work and learn, both in the laboratory and in the classroom, begins with a careful reading of this document. I urge you to comply with all rules and policies stated here. Your adherence to these policies will assure the highest possible level of safety.

John Roush
President

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DIVISION III SAFETY REGULATIONS

Laboratory safety is both a moral obligation and a legal responsibility of Centre College. In September, 1979, then Dean Reckard instructed the Division III Chair to establish a standing committee to: (1) investigate any operation of the Division which bears on the physical safety of students, faculty members or staff members; (2) formulate policies relating to safety; and (3) implement those policies by any appropriate means including inspections. Members of the committee are appointed by the Division Chair each fall.

Since its inception, the Committee has adopted the following safety regulations:
I. Faculty Responsibility for Laboratory Safety

It is the responsibility of all instructors, laboratory assistants and students to follow safety rules and regulations. Since the instructor is ultimately responsible for the design and supervision of laboratory exercises, it is each faculty member's responsibility to assess the specific hazards and to weigh the potential risks against the educational benefit of any given exercise. Where risks are unavoidable, the faculty member should inform students of involved risks, provide students with a written set of safety instructions, and explain and enforce them. Copies of sample safety instructions are available from the Safety Committee.

II. Working Alone or After Hours in a Laboratory

A. No laboratory is to be without the immediate physical supervision of the instructor or trained laboratory assistant at any time when there is a reasonable possibility of danger associated with the lab activities.

B. At the end of the regular afternoon laboratory period (3:40 PM), laboratories are not to be left open unless either the instructor is present or makes clear and binding arrangements with the students still working to shut the pre-locked doors of the lab when they leave. Only under circumstances tightly controlled by the appropriate faculty member should a single student be working in a lab alone after hours.

C. Locked laboratories are not to be reopened by other faculty members and college staff not involved with the course in response to students in the course. If the responsible instructor wishes for the lab to be reopened (and closed) at a particular time, formal written instructions must be left in the designated office area in Young or Olin authorizing security personnel to do so.

III. Reporting of Incidents

Accidents and Incidents need to be reported in a way consistent with the Chemical Hygiene Plan.

IV. Dispensing of Chemicals and Other Potentially Harmful Materials

Rhoneé Rodgers and her student assistants staff the stockrooms when laboratories are in session and keep those rooms locked all other times. They dispense reagents only to faculty or designated student laboratory assistants.

Copies of the Material Safety Data Sheets for essentially all of the chemicals in use in our science laboratories are available to all employees and students. The
compiled MSDS are kept in the stockrooms of Young and Olin Halls. A complete backup set is also held by the Department of Public Safety.

These documents contain a great deal of important information about the physical and chemical properties of the substances listed. In addition, fire and explosion hazard, health effects and spill procedures are covered. Please make use of these important documents. Also, please call these documents to the attention of your students.

The following policies and procedures are now in effect:

**A. Ethyl Alcohol**

1. The stockroom supervisor acts as agent for the College in matters pertaining to the procurement, custody, and use of tax-free alcohol for both experimental and research purposes.
2. Bulk storage of alcohol will continue in the approved, secure area in the basement of Young Hall.
3. No more than two gallons of alcohol will be stored in a locked cabinet in the Young Hall stockroom.
4. Alcohol will be dispensed by the stockroom supervisor to faculty member only.
5. Alcohol will be dispensed exclusively for experimental and research purposes.
6. Records will be kept as follows:
   a. Alcohol transferred from bulk storage to cabinet:
      - quantity
      - date
   b. Alcohol issued to faculty members
      - name of faculty member
      - quantity issued
      - date of issue
      - purpose for which used
      - quantity of alcohol in cabinet after issue

**B. Mercury and Mercury Compounds**

Mercury, if improperly used, poses a serious hazard to all persons in a science building. The Safety Committee has adopted the following regulations on the use of mercury:

1. Mercury should be treated as a controlled substance; that is, records of its use should be kept by the stockroom supervisor.
2. All persons using mercury should be made aware of its poisonous nature, of proper methods of handling it, and of the importance of
cleaning up all spills, no matter how small. (Special equipment is now available for cleaning up spills.)

3. All equipment in which mercury is used should be inspected by the Safety Committee. The Committee will make recommendations for safe use and storage of such equipment.

4. Wherever practical, mercury thermometers should be replaced by alcohol or bimetallic thermometers.

5. Mercury should not be discarded. Used mercury is to be returned to the Olin stockroom for recycling.

C. Radioactive Materials

Radioactive samples fall into two categories: licensed and license-exempt. Government regulations and inventory records for licensed radioactive materials are kept on file by the Radiation Safety Officer (currently Rhonée Rodgers) and by the Safety Committee. Use of licensed materials should be done in consultation with the Radiation Safety Officer.

Safety Practices for Unlicensed Radioactive Samples (adapted from material published by the The Nucleus Inc.)

For all types of samples:

1. Always store them locked behind lead bricks when not in use.
2. Always wear rubber gloves when touching samples.
3. Do not drop or roughly treat any sample.
4. Do not do anything that would cause radioactive materials to be ingested into the body through your mouth, nose, or a cut.
5. After you are finished using samples, wash your hands; if you suspect that radioactive materials are present on your person, tell your instructor who can count the suspected area.
6. Do not remove sources from the lab.

For solid samples:

7. Do not disperse samples by dividing them.
8. Handle the samples by the edge and do not touch the sample center containing the radioactive nuclide with your fingers or anything else; again, use rubber or plastic gloves.

For liquid samples:

9. Be careful about spills and report them to your instructor.
10. All radioactive liquid wastes are to be poured into a liquid waste container, never into a laboratory sink. Your instructor will provide instructions for disposing of liquid samples.
11. Pipetting by mouth is never permitted. Use suction device such as a pipette filler.

D. Controlled Substances

Drugs fall into two categories: licensed and unlicensed. Government regulations for licensed drugs (controlled substances) are kept on file by our Controlled Substance Supervisor (currently Dr. Brent White). The following policies and procedures are now in effect:

1. The Controlled Substance Supervisor will continue to act as the agent for the College in matters pertaining to the procurement, custody and use of controlled substances for both experimental and research purposes.
2. Bulk storage of controlled substances will continue in the approved, secure area of the basement of Young Hall.
3. Controlled substances will be dispensed exclusively for experimental and research purposes.

E. Laboratory Chemicals

The chemicals in a laboratory should be limited to those that are particularly and currently needed by the lab class(es) to which the laboratory is assigned. The quantities of chemicals (particularly those that are volatile, flammable, or highly toxic) should be only those modest amounts immediately needed--bulk storage of such chemicals should be only in the specially designated bulk storage areas which the Young and Olin stockrooms provided for this purpose.

Instructors are responsible for being familiar with what chemicals are in their laboratories, and with their properties and appropriate uses. They are responsible for seeing to it that such reagents are properly stored and secured in central areas within the lab (see below) and for returning to the stockroom at the end of each term reagents that are no longer needed, as well as for properly disposing of empty or near-empty reagent containers. Students and other instructors should not remove reagents from a laboratory without first clearing such action with the instructor in charge of the lab.

To the extent that, within the above guidelines, instructors find it necessary to store reagents in the lab, such storage should comply with the Chemical Hygiene Plan.

V. Disposal of Potentially Harmful Materials

It is the responsibility of the faculty member to determine if potentially harmful materials can be disposed of through normal trash collection or through a laboratory sink, or if more stringent disposal methods are necessary. In the latter
case the faculty member shall deliver these materials, properly labeled, to the stockroom supervisor. It is ultimately the responsibility of the Division III Chair to see that these materials returned to the stockroom supervisor are properly stored and ultimately disposed of. See the Chemical Hygiene Plan for more details.

VI. Regulation on Eye Protection in Olin Hall and Young Hall

An approved eye protective device shall be worn in all laboratories where there is a danger of splashing chemicals, flying particles, or damaging radiation entering the eye. The Division III Safety Committee shall certify what constitutes an approved protective device (eye glasses, face shields, bench-style shields, etc.).

VII. Safety Inspections and Responsibility for Correction of Safety Violations

It is the policy of the Safety Committee to conduct safety inspections of Young Hall and Olin Hall at least every long term. Safety violations and potential hazards are reported to the Division Chair and the faculty member(s) or respective program chair. It is the duty of the Division Chair to assign responsibility for correcting violations, and to determine that reported violations have actually been corrected.

VIII. Building and Laboratory Ventilation

Laboratories. The air velocity of all fume hoods should be checked with a vane anemometer at least once a year. Where an inadequate airflow is found to exist, the airflow should be returned to proper specifications. Hood manufacturers or ventilation engineers should be consulted if existing problems cannot be corrected. Necessary hood airflow rates are on file with the Safety Committee.

Ventilation. At the American Chemical Society short course on laboratory safety held in Chicago in the spring, 1979, it was stated that the following ventilation requirements should be maintained.

- Laboratory 10 air changes / hour
- Lecture Room 6 air changes / hour
- Animal Room 20 air changes / hour

These air change rates should be checked at least biannually. It is the responsibility of the Chemical Hygiene Officer to see that all air flow checks are made and that corrections, if necessary, are made in a timely manner.

IX. Safety Training
Students and faculty cannot follow safe laboratory practices if they are uninformed about safe practice. For this reason Division III will annually conduct a safety training session for student lab assistants and stockroom workers, and for new faculty who will teach laboratory. The Chemical Hygiene Officer is responsible for organizing and holding this safety training. The session will occur just prior to the fall term.