DUTCHESS COMMUNITY COLLEGE
CHEMICAL HYGIENE PLAN

I. Purpose of the Chemical Hygiene Plan at DCC  4
II. Safe Handling of Hazardous Chemicals  4
III. General Recommendations for Safe Practices in the Laboratory  5
IV. Safe Handling of Biological Hazards  14
V. Chemical Waste Disposal Program  15

Appendices:  A: Responsible Personnel  16

B: Employee Information and Training  17
C: Emergency Medical Procedures  17
D: Medical Consultation and Records  18
E: Safety Inspections  18
F: Disposal of Hazardous Chemical Waste  18
G: Medical Waste  19
H: Security Issues  20
I: Reference Texts  21
I. Purpose of the Chemical Hygiene Plan at DCC

The purpose of Dutchess Community College’s Chemical Hygiene Plan is to delineate fundamental safe procedures for storage, use and disposal of chemicals at Dutchess Community College, to outline basic responses to chemical emergencies, and to provide other background information for the safe handling of chemicals.

Issues of chemical hygiene may arise in laboratory work in a variety of academic disciplines, in the use of chemicals by DCC staff in the course of their duties, and through contact with chemicals by persons visiting areas where they are being used. All staff who must work with chemicals in the course of their duties should be knowledgeable about safe procedures for their storage, use, and disposal, and how to respond to potential emergencies. Furthermore, faculty and staff who work with or teach students must pass on to them appropriate safety information, and enforce student observation of agreed upon safety procedures.

This is an internal document that is intended to be a resource for DCC employees and students. It will be made available to all college personnel.

II. Safe Handling of Hazardous Chemicals

A copy of the Hazards Communications/Right to Know Program will be readily available in all areas where hazardous chemicals are used. A master file of all Material Safety Data Sheets (MSDS) shall be available in the Security Office. In addition, all laboratories will have a copy of the MSDS for each chemical used and stored in the laboratory area.

Upon receipt, all chemical containers should be inspected and dated. Unlabeled or improperly labeled containers must not be accepted; the shipper should be notified immediately and arrangements should be made to return the item to the sender. An inventory of all chemicals in storage rooms and laboratories must be kept by the responsible staff member. An annual inventory should include an inspection of all containers for integrity; the expected shelf life of the stored chemicals should be checked and all labels should be checked for legibility.
All containers containing chemicals (regardless of hazard) must be labeled during use and storage. A chemical that has been transferred from its original container must be labeled with the name of the chemical, the date and the person responsible for the transfer. For hazardous chemicals, a hazard warning in words, pictures of symbols should be used. The National Fire Protection Association (NFPA) labeling system (shown below) may be appropriate.

III. General Recommendations for Safe Practices in the Laboratory

Scientists must use hazardous materials and therefore certain precautions must be regularly observed in order to minimize the probability and consequences of an accident. Safety is a result of an alert, thoughtful and informed attitude on the part of each individual. Thus, the most important and reliable way to maintain a safe working environment is to assure that
everyone involved in laboratory operations is safety conscious. It is the responsibility of all administrators, faculty, staff and students to promote safety awareness.

While it is impossible to design a specific set of rules that will encompass all potential dangers and thus assure safety in all laboratories, the following general guidelines have proven useful in avoiding accidents and minimizing injuries in the laboratory. A general respect for these rules can make the laboratory a very safe place to work.

1. Before beginning any new task or experiment, prepare yourself by carefully reading instructions and any necessary background information so that you are aware of the potential hazards (physical, chemical, biological, or radiological) and thus can take the necessary precautions. Do not attempt any procedure for which you have not been appropriately trained, and do not handle any chemical unless you are familiar with its properties and hazards.

2. All persons working in the laboratory should be familiar with the location and operation of the basic safety equipment appropriate for the specific laboratory. This includes fire extinguishers, eyewashes, showers, fume hoods, and emergency exits.

3. Appropriate dress should be worn in the laboratory. This means sturdy shoes, not sandals, and it excludes clothing of fluffy or bulky material, clothing with excessively loose sleeves or other areas of fabric, or which exposes large areas of skin. Long hair should be tied back.

4. Safety goggles must be worn in the laboratory at all times when experiments are in progress. Contact lenses should not be worn in a laboratory. If a chemical does splash into the eyes, rinse the eyes thoroughly using an eyewash for a minimum of twenty minutes. Seek medical attention immediately by contacting the College’s Security Department.

5. Goggles must also be worn by student aides at all times when working in preparatory labs and storage areas containing chemicals, and while washing laboratory glassware and equipment.
6. Wear a chemical-resistant laboratory apron, lab coat, and/or gloves as appropriate. For example, extra protection of this kind is often needed to protect against biological hazards, corrosive liquids, and allergenic, sensitizing, or toxic chemicals.

7. Consumption of food or drink is prohibited where chemicals are being used or stored. Smoking is not allowed.

8. Avoid unnecessary exposure to chemicals. Do not taste chemicals, and generally do not "sniff" to test chemicals. Do not pipette chemicals by mouth. Do not leave chemicals in unmarked containers.

9. Never light a Bunsen burner in the laboratory without considering what flammable materials may be in use in the laboratory. Make sure the burner is in good working order, and that the hose is in good condition and free of leaks. Never leave a lit bunsen burner unattended. When gas is not in use, make sure the safety valve for that room is in the OFF position. If a strong odor of sulfides is present in the room (methane thiol is added to gas to make leaks detectable), turn off the gas and leave the room until the odor clears. Do not flip any electrical switches. If the odor persists, call Security.

10. Wash your skin well, with soap and water whenever your skin has been exposed to a hazardous chemical. Always wash your hands before leaving the laboratory.

11. Avoid hazards to the environment by following appropriate procedures for chemical recovery, treatment, or waste disposal of used chemicals. Be sure all used chemicals are placed in clearly labeled containers. Make sure students are aware of the appropriate disposal requirements of each chemical in use.

12. Keep all work areas, especially laboratory benches, free of clutter. Keep all aisles, hallways, and stairs clear of chemicals. Store chemicals in their proper location.

13. Promptly clean up all spills. Properly dispose of the spilled chemicals and clean-up materials. Students and student aides should immediately inform a faculty or staff member of any spill or injury.
A. Preparation before working in the laboratory:

Always read through an experimental procedure carefully before you plan to conduct the experiment. Be aware of the hazards associated with the experiments. For example, become familiar with special techniques, specific chemicals which may be hazardous, and specific biological hazards before beginning work. Any unusual procedures should get prior approval from the department head, laboratory supervisor, or a responsible faculty member in that department. Any of the following circumstances would require prior approval:

1. Using hazardous chemicals in quantities which exceed what is considered laboratory scale.
2. Using extremely hazardous materials such as teratogens, blood products, and infectious agents.
3. Using chemicals for which an MSDS is not available.

All laboratories where hazardous chemicals are used should be equipped with basic safety equipment like fire extinguishers, showers, fume hoods, and eye washes. Acquaint yourself with the location and use of all safety equipment. In addition, gloves should be available to all workers in the laboratory. Chemical "spill kits" should be placed in strategic locations in the laboratory so that they are easily accessible to instructors and laboratory assistants. All chemical containers must be labeled clearly with the identity of the contents and special hazards. Containers which are not labeled properly should be treated as waste and disposed of in an appropriate manner. Broken glass should not be disposed of with ordinary garbage, but placed in specially marked receptacles. Contaminated, single-use glassware shall be disposed of in an appropriate manner in specially marked receptacles.

B. Procedure-Specific Safety Procedures:

All workers using a chemical should first make themselves fully informed of its properties, specific hazards, and toxicity. If you are unfamiliar with a specific chemical you
plan to use, consult the Material Safety Data Sheet (MSDS) which is kept in the laboratory. Take note of the recommended procedures for handling a spill, and for proper disposal of the chemical. Consult an appropriate reference for specific disposal procedures (Appendix I). The law states that a material is not waste until the worker declares it to be waste. In DCC labs, certain chemicals are collected for recovery and treatment. These will be declared waste by the lab staff when it is decided that they are no longer useful.

Avoid working alone in the laboratory. If this is not possible, arrange for a co-worker or security personnel to check in with you periodically. While faculty and staff may find that working in the laboratory alone is necessary on some occasions, it is best to avoid chemicals and procedures that expose them to higher levels of risk (chemicals with acute toxicity, instability, fire hazard, for example). Students should never work in the laboratory alone.

**Toxic Chemicals:**

Toxic chemicals are those which damage biological structure and function through exposure or accumulation in the tissues. Usually a poison is defined as a substance which may cause serious health effects or death if relatively small amounts of the toxin are inhaled, ingested or absorbed by the skin. The MSDS for many chemicals used in the laboratory will state the recommended limits or OSHA-mandated limit, or both, as guidelines for exposure. These limits may be used to assist the worker in determining the safety precautions, control measures and safety apparel appropriate when working with this chemical.

Carcinogens are a class of toxic chemicals capable of increasing the risk of cancer through exposure, usually over time. Teratogens are toxic chemicals capable of causing an increased risk of birth defects in children of exposed workers. Prudent practices are essential when working with known or suspected carcinogens and teratogens to minimize exposure to these chemicals.

Generally, when the volatile chemical has a threshold limit value (TLV) or permissible exposure level (PEL) which is <50 ppm or 100 mg/m³, an approved fume hood should be used.
Hoods should be operated with the sash placed in the optimal position, never fully open. Chemicals should be placed at least four inches inside the sash, and face velocity should be within the range of manufacturer’s specifications. Avoid skin contact by wearing the proper type of protective gloves. Each experimental procedure should include specific instructions on proper disposal of the toxic material.

All laboratories which use mercury, including mercury thermometers, should be equipped to handle mercury spills. Two procedures prevail as the leading methods for the proper disposal of mercury: 1. Vacuuming of the spilled mercury with a laboratory aspirator set-up or "sweeper" followed by storage in a closed container for later disposal as heavy metal waste. 2. Absorption with Hg Absorb™ powder or sponges, which are available in the stockroom; a mercury amalgam is generated and the resulting amalgam will not emit dangerous mercury vapors.

**Flammable Chemicals:**

Flammables are materials which may easily ignite, burn and serve as a source of fuel for a fire. In general, the flammability of a chemical is determined by its flash point, the lowest temperature at which an ignition source can cause the chemical to ignite momentarily under certain controlled conditions. Chemicals with low flash points, below 200 °F (93.3 °C), are generally considered "fire-hazard chemicals". Organic solvents are the most common flammable chemical in the science laboratories. All fire-hazard chemicals should be stored in a flammable-solvent storage area or in a designated cabinet. Remember that the vapors of flammable liquids are heavier than air and thus will travel along bench tops and down drain troughs. It is therefore essential that all flames within the vicinity of a flammable liquid be extinguished. Adequate ventilation is one of the best ways to prevent vapors from accumulating and thus when working with large quantities of flammable liquids, work in a fume hood.

When working with flammable materials, be sure that there is a fire extinguisher and safety shower nearby. Should a person's clothing catch fire, place the person under a safety
shower or push them to the ground and roll them over to extinguish the flames. Prevent the victim from running. A so-called “fire-blanket” should not be used - it tends to funnel flames past the victim's mouth, and clothing continues to char beneath it. However, it is useful for retaining warmth to ward off shock after the flames are out.

**Reactive Chemicals:**

Reactive chemicals are materials which may release large amounts of energy under certain reaction conditions. A reliable reference on chemical reactivity is the current edition of "Handbook of Reactive Chemical Hazards" by L. Bretherick. Guidelines on which chemical are reactive are sometimes provided on the MSDS and on labels. Particular caution should be exercised when working with oxidizers, organic peroxides, water-reactive materials, air-sensitive materials and explosives. In general, handle reactive chemicals with all the proper safety precautions, including segregation in storage and prohibition on mixing even small quantities with other chemicals without prior approval and appropriate protection. For example, oxidizers should not be stored with flammable materials, and concentrated strong acids should not be stored with concentrated strong bases.

Laboratories that use ethers should be wary of peroxide formation. These impurities can form spontaneously from ethers in the presence of air. They act as high explosives, and are very unstable. Even small traces are enough to ignite the ether. Cans or bottles of ether solvents should be dated when opened and, if not used within a year, should be tested and treated for peroxides or disposed of. Opening bottles of ethers that have come into contact with air and then been stored for an extended period of time can be very dangerous. If in doubt, transfer such samples to a qualified disposal company without opening them.

Disposal of reactive chemicals generally requires prior treatment to render the chemical less hazardous. Consult an appropriate reference (Appendix I).
Corrosive and Contact-Hazard Chemicals:

Strong acids, alkalis, dehydrating agents and oxidizing agents should be handled carefully, avoiding contact with the skin and eyes and breathing of or skin contact with the vapors. Corrosivity, allergenic and sensitizer information is often given on manufacturer's MSDS or on labels. Wear safety goggles, gloves and a protective laboratory apron or coat. Because many acids and bases release a tremendous amount of heat when they are mixed with water, they should always be added to water rather than water added to them. This is particularly true of concentrated acids and bases.

All spills should be cleaned up immediately. Small spills may be diluted with water and then flushed to the sewer system. Large spills of concentrated acid and bases should be neutralized before diluting with water. Laboratories handling such reagents should have a spill kit. (See “Chemical Spills” section for contents.)

If skin or eye contact does occur with one of these substances, the affected area should be washed immediately and thoroughly with large quantities of water for at least 20 minutes, using eyewash fountains or the sink faucet as the situation warrants. No attempt should be made to neutralize the reagent chemically after contact has occurred. Remove any contaminated clothing. Contact the laboratory supervisor in the event of any accident. Seek medical attention immediately.

Vapors of volatile acids and of ammonia (a volatile base) can be very harmful and corrosive, and are inhalation hazards and lachrymators. Spills of large quantities of these substances should be remediated by specialists using SCBA equipment. Evacuate the area and call for help.

Compressed Gases:

Regardless of the use or contents of a cylinder, compressed gas cylinders represent a serious health and safety hazard. Flammable gases and toxic gases present obvious hazards but even "harmless" or inert gases may cause asphyxiation if the gas accumulates to a high
concentration. All cylinders should be checked for leaks, before and after a regulator is put in place. A compressed gas cylinder is a potential projectile or explosion risk if damaged. Damage is most likely when not properly secured. All compressed gas cylinders should be clamped securely at all times during usage, transport and storage. In addition, during transport and storage, regulators must be removed and the cylinder caps must be secured. Gas cylinders must always be transported in a cylinder cart.

**Chemical Spills:**

Regardless of the chemical involved, an immediate and appropriate response is essential. The first line of defense is spill prevention. Large bottles of reagents should be carried inside a bottle caddy or other unbreakable container. Generally small spills (less than one liter) may be handled safely with the proper materials and appropriate training. A chemical spill kit should be available in all laboratories where chemicals are used and stored. However, never attempt to clean up a chemical spill if you are uncertain how to do so safely or lack the proper protective equipment. Evacuate the area and get assistance. In addition, if the spill is large, evacuate the area and get assistance before attempting to deal with the spill.

Attend to any individual contaminated in the spill. If skin contact with a corrosive or toxic chemical is involved immediately douse the affected area with water, using a shower, sink faucet, or eye wash as necessary. Remove all contaminated clothing and jewelry and continue flushing with large quantities of water for at least 20 minutes. Notify the laboratory supervisor. Seek medical attention if needed by calling Security (Extension 4911), which will notify the college nurse / EMS / Ambulance.

There are two basic options when handling a chemical spill - chemical neutralization and chemical absorption. Most organic solvents (both water soluble and insoluble) should be collected using a dry absorbent. Absorption reduces the chance for fire by suppressing flammable vapors. The used absorbent should be collected, bagged, labeled and stored for proper disposal. Most acids and bases can be safely neutralized by using either sodium
bicarbonate, \( \text{NaHCO}_3 \), or a commercially available neutralizer. Be sure to follow directions which accompany the commercial neutralizers. Spill Kits should be maintained in laboratory stockrooms.

**Spill Kit Contents:**

- 2 pounds acid neutralizer
- 2 pounds base neutralizer
- 5 pounds clay-type absorbent
- 2 pairs gloves
- 2 pairs safety goggles
- 4 chemical sorbent sheets
- 2 waste disposal bags
- spill waste disposal labels
- 1 organic vapor / acid gas respirator
- Hg Absorb powder or aspirator system for Hg collection

**IV. Safe Handling and Disposal of Biological Hazards:**

Biological hazards (e.g. pathogens, bacteria, blood, etc.) will normally be used only in the Microbiology and MLT (Medical Laboratory Technology) laboratories. Faculty are trained in precautions and disposal procedures for these hazards.

Handling of biological hazards in the AHBS Department will not normally include the blood or infectious agents as listed in "Biosafety in Microbiological and Biomedical Laboratories", at the U.S. Centers for Disease Control and Prevention website (http://www.cdc.gov/biosafety/publications/bmbl5/index.htm). Prudent handling practices (hood, sterile techniques) and proper protective equipment (gloves, lab coat, goggles, etc.) will be used when handling biological hazards. A reliable reference on Biological Hazards is **Biosafety in the Laboratory** (Appendix I).

Biological waste should be placed in appropriately labeled receptacles and disposed of by autoclaving at 121°C and 15 psi for one hour. After treatment, the waste is considered non-hazardous but is collected for disposal by a medical waste transporter. Contaminated syringes, needles and Pasteur pipettes should be disposed of in an appropriately labeled "sharps" container and stored properly until approved pick-up is arranged.
Medical Waste Management System:
The College health office is the office responsible for sharps and medical waste program. Call 8075 for details.

V. Chemical Waste Disposal Program:

The aim of the program is to minimize risk to people and the environment upon disposal of laboratory chemicals. First and foremost, efforts to minimize the quantity of chemical waste must be made. Chemicals should be purchased in quantities that are consistent with their planned use. In addition, staff and faculty should regularly consider ways of reducing the amounts of chemicals used and reusing chemicals generated in laboratory experiments and procedures. In short, recycling and chemical reclamation should be used whenever possible.

Each written laboratory experiment should include specific information for students on the safe treatment and disposal of hazardous chemicals used. Staff and faculty should prepare themselves before scheduled labs, and be ready to answer student questions on the subject of safe handling and disposal. Chemicals used in laboratory work should be collected for recovery and possible recycling for reuse. These should be stored properly until recovery is completed, at which time they may be declared waste by the laboratory supervisor. Once officially declared to be chemical waste, they should be prepared for timely pick-up by a professional waste disposal company. In general, concentrated acids or bases, highly toxic, malodorous or lachrymatory substances, and any substance which might interfere with the biological activity of waste water treatment plants, create fire or explosion hazards, cause structural damage, or obstruct flow must not be placed in the sewer system. Regular inspections will be made to ensure labels are affixed and the receptacles of waste are not leaking and are stored correctly.

Small quantities of non-toxic water-soluble materials may be disposed of in a laboratory drain. Small quantities of common mineral acids and bases may be diluted and disposed of in a laboratory drain. Larger quantities of acids and base should be neutralized prior to disposal down the sink. Volatile organic solvents should be separated into halogenated and non-
halogenated substances and stored until the next pick-up by a qualified waste disposal company. Incineration in an environmentally acceptable manner is the most practical method for disposal of combustible laboratory waste. Heavy metal wastes should be collected and stored for processing and disposal.

Appendix A: Responsible Personnel

The Chemical Hygiene Committee oversees and monitors the effectiveness of the Chemical Hygiene Plan and revises and updates it annually. The Chemical Hygiene Officer (CHO) for the College will provide technical guidance in development and implementation of the Chemical Hygiene Plan, thereby ensuring that any monitoring or medical records necessary are kept in accordance with the OSHA requirements. The CHO oversees that the MSDS collection is maintained in the appropriate departments and oversees the procurement and storage of laboratory chemicals and disposal of waste materials. The CHO is also responsible for conducting periodic safety inspections and training sessions, addressing any actual or potential safety hazard in the laboratory operations. The Chemical Hygiene Coordinator is a faculty member with expertise in chemistry who is available to provide advice on chemical properties to the Chemical Hygiene Committee and any DCC personnel who have questions.

Department heads have the responsibility to insure that the general recommendations for safe laboratory practices are followed in all laboratories in their department, and that departmental faculty and staff handling chemicals receive appropriate training. In addition, they must insure that appropriate safety equipment is available to laboratory workers and that all MSDS sheets are available for the chemicals used in the laboratories. The personnel responsible for the individual laboratories are Teaching Laboratory Assistants from the MPCS (chemistry), AHBS (biology), and PVAC (art) departments. The department heads responsible for each lab area should post their office and home telephone numbers by the telephones in the labs. They should be contacted immediately in case of any accident occurring in their laboratories. Campus Security’s telephone number should also be posted, as they must also be contacted in the case of
emergencies. Members of the Chemical Spill Response include the Security Director, the HVAC Supervisor, the Chemistry Laboratory Teaching Assistant, the Chemical Hygiene Coordinator, and the department head or designee in whose area the spill occurs.

**Appendix B: Employee Information and Training**

General safety instructions (preferably included in the lab books) should be given to every student before he or she uses the laboratory. Directions for addressing problems, which are specific to any experiment, should accompany that experiment.

Laboratory assistants should be given explicit instructions on how to deal with potential problems such as fires, burns, cuts and toxic chemical spills.

All lab workers will be informed as to the provisions of the OSHA standards "Occupational Exposures to Hazardous Chemicals in the Laboratories" (29 CFR 1910.1450 dated 5/1/90). This is available online at [www.osha.gov/SLTC/laboratories/index.html](http://www.osha.gov/SLTC/laboratories/index.html).

Copies of this Chemical Hygiene plan will be available to all employees. All laboratory workers will be aware of the location of MSDS sheets and other reference material on the safe handling, storage and disposal of hazardous chemicals in the workplace.

Employees will be made aware of permissible exposure limits (PEL) for regulated substances and recommended exposure limits for other hazardous chemicals where no OSHA standard applies. Employees will be made aware of signs and symptoms associated with exposure to hazardous chemicals.

**Appendix C: Emergency medical procedures**

In the event of a medical emergency, laboratory personnel are not required to provide direct first aide, although they may do so on a voluntary basis. They are required to contact Security at extension 4911. Security will coordinate emergency medical response with the local ambulance service.
Appendix D: Medical records

1 - All injuries occurring in the laboratory should be reported to the Dutchess Community College Health Office who will maintain a record of incidents.

2 - A physical examination or medical consultation should be available to employees when:
   a) Any lab worker develops signs or symptoms of a chemical exposure.
   b) Routine exposure, spill, leak or other unusual occurrence causes the probability of an exposure.
   c) Requested by an employee.

3 - The employer will provide the examining physician with specific information on the identity of the hazardous chemical, conditions of exposure, and a description of the signs and symptoms experienced by the worker.

4 - The physician will provide a written opinion for a recommended follow-up examination, test results, detected medical conditions that may pose increased risk and a statement that the employee was informed of medical examination and consultation results.

Appendix E: Safety Inspections

The Chemical Hygiene Officer will schedule regular safety inspections of laboratories and chemical storage facilities. Safety equipment will be regularly checked, including fire extinguishers, eyewashes, showers, spill kits, stockrooms, and fume hoods. The Chemical Hygiene Plan will be reviewed regularly by the Chemical Hygiene Committee.

Appendix F: Disposal of Hazardous Chemical Waste

Specifically labeled bottles must be kept available for all used chemicals being recovered. Used chemicals should be collected for appropriate treatment or recovery procedures. The chemicals may be designated as waste with the approval of the Chemical Hygiene Coordinator.
These should be separated according to compatibility and may include designations such as "halogenated solvents", "non-halogenated solvents", "solid organics", "heavy metals", and "mercury". These substances should be stored in the flammables cabinets or fume hoods until pick-up when they will be sent to an approved disposal facility.

**Appendix G: Medical Waste**

In order to manage the medical waste, its usage (including sharps) and collection, the following guidelines are offered.

**College Health Office**

The supervising nurse shall be responsible for overseeing the college’s medical waste operation. An authorized medical waste transporter shall be identified via the Bid Process and a contract will be signed for services. The supervising nurse will prepare purchase orders and D.E.C. tracking forms, and coordinate pick-ups. Additionally, areas will be identified for the temporary storage for medical waste bags and sharps containers. The medical waste must be placed in authorized cadmium-free red bags and separately stored, labeled and sealed securely until pick-up by the authorized private contractor is necessary. The supervising nurse will train key people in those departments, to be identified as Medical Waste Collectors.

**Additional Information**

Falcon Hall Gym, the College Security Department, and Day Care will have any medical waste generated brought to the College Health Office for bagging, labeling and disposal as soon as possible. The supervising Nurse will retain all copies of medical waste manifests for tracking purposes.
Appendix H: Security Issues

In accordance with heightened national security, security of our laboratories and chemical storage areas has become a more dominant issue in our planning and operation activities.

1. Training

The Chemical Hygiene Officer has redacted the training module to emphasize the Federal and State requirements, critical areas on campus, properly identifying materials (radioactive, chemical, biological) and the mandate associated with securing them.

2. Security Measures

A layered approach to security of chemical storage includes key controls, random security patrols, lab assistant oversight of student aide access to chemicals, instructor responsibility for students in labs, and supervision by Department Heads. Other “target hardening” measures such as added CCTV and emergency phones, coupled with the college’s chemical hygiene committee’s self-inspection audits throughout the year, will add to the heightened awareness of risk and enable necessary responses.

3. Liaison

The Director of Campus Safety is in contact with the NY State Police Counterterrorism Intelligence Unit, the Dutchess County Sheriff’s Counterterrorism Unit, the Town of Poughkeepsie Police Department, Fairview Fire Department, the Dutchess County Coordinator of Emergency Response, and other State emergency management teams on a regular basis.

4. Follow-up Inspections

As is the present practice, unannounced inspections of labs and storage areas by department heads, fire marshals, OSHA or PESH representatives, and members of the Chemical Hygiene Committee will continue to be the norm. Lab staff and staff responsible for chemical storage areas should be ready at all times for inspection. When necessary, in-place procedures may be changed. Appropriate action will be taken when non-conformance is discovered, whether through administrative or criminal channels, as the situation dictates.
Appendix I: Reference Texts

- *Handbook of Reactive Chemical Hazards*, L. Bretherick.