STANYS Minimum Safety Guidelines for Presenters and Workshop Leaders

(Adapted from the NSTA guidelines)

Preamble

The Science Teachers Association of New York State (STANYS), an organization of science education professionals dedicated to the stimulation, improvement, and coordination of science teaching and learning, supports scientific safety at all levels. Presenters, workshop leaders, contestants, and authors at STANYS sponsored activities serve as role models for other science educators. As role models, these individuals must develop,encourage, and display good safety habits at all times. Science safety is an integral part of science education and serves as a preparation for life. STANYS requires that all presentations,workshops, and related science-education activities, be conducted in accordance with recognized safety procedures and good common sense.

All Presenters and workshop leaders must follow the STANYS minimum safety guidelines.

The following MAY NOT be part of any presentation or workshop at the STANYS conference under any circumstances:

1. Parts of the body are not to be placed in danger, such as placing dry ice in the mouth or dipping hands or fingers into liquid nitrogen or molten lead, or exposing the hands and face to microorganisms. Demonstrations such as the following shall not be conducted: walking on broken glass or hot coals of fire with bare feet, passing an electric current through the body, and lying on a bed of nails and having a concrete block broken over the chest.
2. Live vertebrate animals may not be used in demonstrations or for experimental purposes. Such animals may be used only for observational purposes provided the animals have been lawfully acquired, are housed in proper containers, and are handled in a humane way following the NSTA's "Guidelines for Responsible Use of Animals in the Classroom."
3. Live ammunition, firearms, or acutely dangerous explosives, such as benzoyl peroxide, diethyl ether, perchloric acid, picric acid, and sodium azide, may not be used. Commercially available fireworks and blasting caps shall never be employed.
4. Plants with poisonous oils, saps, or other plants known to be generally toxic to humans are not to be used.
5. Experiments or demonstrations with human blood/body fluids may not be conducted.
6. Radioactive powders, liquids, or solutions are not to be used except in a laboratory facility.

Guidelines for Preparing Your Presentation

1. Practice all demonstrations or workshop procedures BEFORE presenting them to an audience or having participants try them.
2. Research and understand the properties, chemical reactions, and dangers involved in all demonstrations. Plan to use correct handling and disposal procedures for all chemicals and biohazards used. Arrange to have a fire extinguisher available whenever the slightest possibility of fire exists.
3. Prepare a handout that gives participants detailed Material Safety Data Sheets (MSDS) with instructions about the procedures, safety precautions, hazards, and disposal methods for each demonstration and workshop.
4. Prepare photographs, slides, videotapes, PowerPoint presentations, etc. that show safe practices. When preparing these materials, safety goggles and equipment shall not be removed for aesthetic considerations.
5. In planning demonstrations and/or workshops, keep quantities of hazardous materials to a minimum. Use only those quantities that can be adequately handled by the available ventilation system. Do not carry out demonstrations that will result in the release of harmful quantities of noxious gases into the local

air supply in the demonstration or other rooms.The following gases shall not be producedwithout using a fume hood: nitrogen dioxide, sulfur dioxide, and hydrogen sulfide. Volatile, toxic substances such as benzene, carbon tetrachloride, and formaldehyde shall not be used unless a fume hood is available.

6. Make sure your glassware and equipment are not broken or damaged. The use of chipped or cracked glassware shall be voided. If glassware is to be heated, PyrexTM or its equivalent shall be used.
7. Thoroughly check motor driven discs that will be revolved at moderate or high speeds. Make sure the disc is sturdy, that it contains no parts that may come free, and that the safety nut is securely fastened.
8. Arrange to use a safety shield and/or eye protection for audience members and interpreters for any demonstration(s) in which projectiles are launched or when there is the slightest possibility of an unsafe explosion. Do not allow direct viewing of the sun, infrared, or ultraviolet sources.
9. Make sure any lasers to be used in demonstrations are helium-neon lasers with a maximum output power rating not exceeding1.0 milliwatt. At all times, avoid direct propagation of the laser beam from the laser into the eye of an observer or from a reflected surface into the eye.
10. Secure pressurized gas cylinders by strapping or chaining them in place or by using proper supports, i.e., lecture bottles.
11. Obtain, in advance, the necessary state and/or local permits needed, for the firing of model rockets. Activities involving the firing of rockets must be well planned and follow Federal Aviation Agency (FAA) regulations, state and local rules and regulations, and the National Association of Rocketry's (NAR) Solid Propellant Model Rocketry Safety Code.
12. Arrange for appropriate waste containers and for the disposal of materials hazardous to the Environment.
13. Plan to dress safely for your presentation or workshop.

If you have any questions abut your presentation, please contact the program chairperson of STANYS.

<u>During the Presentation:</u>

1. Comply with all local fire and safety rules and regulations. Follow these guidelines.
2. Wear appropriate eye protection, an apron, ear protection, and similar protective gear for all chemical de monstrations or when appropriate for other demonstrations. Provide eye protection, aprons, and safety equipment for participants who will be handling chemicals, hazardous substances, or working with flames.
3. Do not select volunteers from the audience. Assistants used in demonstrations shall be recruited and given the proper instructions ahead of time.
4. Warn participants or audience to cover their ears whenever a loud explosion is anticipated.
5. Use a safety shield for all demonstrations that involve the launching of projectiles, or whenever there is the slightest possibility that a container, its fragments, or its contents could be propelled with sufficient force to cause injury. Shield moving belts attached to motors. Use caution when motor-driven discs are revolved at moderate or high speeds.
6. Follow proper procedures for working with pressurized gases.
7. Use appropriate gloves and shields when working with hazardous chemicals and biohazards, cryogenic materials, hot materials, radioactive substances, vacuums, electromagnetic radiation,and when presenting animals for observation.
8. Do not taste or encourage participants to taste any non food substance. A food substance subjected to possible contamination or unsafe conditions shall never be tasted.
9. Alert the audience clearly at the beginning of the program of the presence or production of allergenic materials such as strobe lights, microwaves, theater smoke, lycopodium powder, or live animals.
10. Maintain clear egress during the demonstration or workshop.
11. Emphasize and demonstrate appropriate safety precautions throughout the presentation or workshop.
12. Distribute a handout that will give participants detailed instructions about the procedure, safety precautions, hazards, and disposal for each demonstration and workshop.