



# Teaching Laboratory Courses

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## *Purpose and Significance*

One of the most important responsibilities of a graduate assistant is leading or assisting in laboratory instruction. Effectively training and educating students to enter the workforce requires active learning and “hands-on” practical experiences during a student’s tenure at Ball State University. The value placed on practical experience is illustrated by the opportunities for capstone activities such as internships, clinicals, and undergraduate research projects. The instructional laboratory provides the initial link between the real world and the theories, concepts, and facts learned in the classroom. The laboratory helps bridge the gap between reality and the idealized models constructed to understand cause and effect. Here, students begin to meet and deal with problems, practices, procedures, and technologies generally encountered in real-life situations as well as those specific to particular disciplines. Thus the laboratory helps students develop the practical skills and attributes valued by employers everywhere.

In the laboratory, the graduate teaching assistant (TA) serves as a teacher, an advisor, a resource person, a catalyst for student progress, and as an evaluator of student work. To serve in these capacities, the TA must have an understanding of the contributions the laboratory makes in the education of students. The laboratory serves to reinforce and demonstrate principles discussed in the classroom. The student learns about measurement and the significance of the experimental approach. Experience in the use of measuring instrumentation and other basic equipment is acquired. Learning about statistical techniques and measurement errors makes the student aware of the relative worth of data. The methods and tools for data collection, display, and analysis are learned in the laboratory. In the laboratory, practical problem-solving skills, critical thinking, organizational, communication, and teamwork skills are exercised. Students develop proficiencies in arriving at conclusions based on analysis of the experimental data and communicating the technical results and

supporting rationale. Working in pairs or groups, students learn valuable teamwork lessons in cooperating and communicating to organize and execute the lab work.

Although the primary purpose of your laboratory duties is to help students learn, the performance of graduate assistant duties results in your learning and skill development in all the areas mentioned above. In fact, one goal of the graduate assistantship and its associated duties is to provide academic training for the graduate student. In addition to improving the skills mentioned above, your TA experience helps you develop leadership and management skills, oral and written communication skills, interpersonal working relations with faculty, staff, and students. Teaching in the laboratory instills self-confidence and pride in your professional abilities.

As a graduate assistant, you represent your department, Ball State University, and your profession. Your professional and academic performance reflects on the reputation and overall strengths of your department and university. As a lead person in the laboratory, your demeanor, motivation, attitude, and appearance while carrying out your duties are important influences for successful student achievement of laboratory goals and objectives.

## *Getting Started*

Now that you know the importance of your *job* as a graduate teaching assistant, just how do you begin your service? Where is the starting line for new graduate assistants and which way should you run? As will be emphasized through repetition in this document, two early actions *by you* are imperative:

1. Contact your department
2. See your course professors

The first thing you should do is contact your department well in advance of the beginning of the semester and talk with the department chair or designated faculty contact for graduate assistants. If

you have not already been so informed, you should inquire about when you need to come to the department prior to the beginning of the semester. During this contact, you can also find out about university and departmental orientation activities and the annual Graduate Student Development Conference hosted by the Graduate School. Your assigned TA duties for the semester may be available to you at this time as well. Your department may provide written information outlining general expectations, policies or guidelines, and procedures for you to follow in your laboratory duties (See Chapter 2, [TA's Entering the Academy: Special Concerns](#), Chapter 4, [Preparing and Designing a Course](#), and Chapter 6, [Teaching Methods](#), for general information about your TA duties.

Once you know your assigned laboratory sections, you should contact and meet with the course professors to discuss your role and duties as the teaching assistant. Ideally you should meet your professors well in advance of the first laboratory session so you have a chance to become acclimated to your new job and to prepare for that important initial lab session during the first week of classes. Be aware that your course professor will define your role in the laboratory. Your role may range from leading the laboratory session as the primary and only laboratory instructor to, in some cases, a secondary role in helping the students with the conduct and documentation of experiments. Some professors will give detailed instructions concerning policies and procedures that you must follow; others may provide only general guidelines. You may also be introduced to experienced graduate laboratory assistants who can answer your questions or discuss laboratory teaching issues with you when the professor is unavailable. Frequent communication with the course professor is essential to understanding and executing your duties as a graduate laboratory assistant.

The following sections will provide hints, instructions, and details about your service. We begin with advice concerning your professional development and describe some details of your responsibilities. Please pay close attention to the described elements of good laboratory instruction that follow. They are based on experience and provide valuable guidance for you. Safety in the laboratory is discussed as a separate topic, indicating its tremendous importance, and is “must” reading for you. Use this information to help

you achieve the “best” rating early in your tenure as a graduate laboratory assistant!

### *Professional Development*

#### **Integration into your departmental culture:**

Studies have shown that a major factor in completion of a graduate degree is the presence of supportive human relationships (Lovitls, 2001). Students will quit if they feel alienated or unwelcome. Consequently, it is helpful to view your assistantship duties as a mechanism for becoming integrated into your academic or department's culture and for developing interpersonal working relationships with peers, staff, and faculty. To begin this process:

1. *Meet with the department chair* before the term begins, if possible, to introduce yourself (again or for the first time) and to find out your teaching assignment. This will help to demonstrate to the chair that you are serious about your assistantship duties and that you are eager to be a part of the educational team in your department.
2. *Meet with the supervising instructor(s)* the first day of the term, if possible, and thereafter on a regular basis. The reasons given above for meeting with the chair, of course, also apply to meeting with the instructor who will supervise the courses that you teach. In addition, frequent conversations with your supervisor will allow you to obtain valuable feedback on your performance and to establish a good rapport.
3. *Remember that your performance as a teaching assistant will probably become “departmental information.”* Not only is the supervising instructor informally evaluating your performance on a regular basis, many departments have formal evaluation forms that are completed by the student, the professor, or both. Consequently, good evaluations can help to establish your reputation as prepared, conscientious, competent, and effective in your role as teacher. This is your opportunity to be viewed as a team player and as a person eager to learn about and participate in academic life. Your performance may also earn you concrete rewards. For example, some departments have Graduate Teaching Awards that have a monetary prize. You will also be able to ask professors for letters of recommendation.

4. *Attend departmental functions* when possible and certainly if required. Attending departmental seminars, thesis/dissertation defenses, and social functions will provide you with opportunities for interactions with peers and faculty. By building up a collaborative network, you will be able to talk to other graduate students or faculty more easily about assignments that come up in your own course work, for example, or about issues that effect progress toward your graduate degree. These interactions will generally have a positive influence on your intellectual and personal growth.

### **Sharpening your own skills:**

Ask any professor; there is nothing like teaching a subject to help you learn it! In fulfilling your assistantship duties you can expect that you will become more proficient in your lab skills and in the theory of your major subject. Furthermore, your “people skills” will improve as you practice how to communicate effectively with students, staff, and faculty.

Your TA experience helps to develop:

- academic training and increased competence
- leadership and management skills
- oral and written communication skills
- self-confidence and pride

And so, even if your career goals do not involve teaching, your assistantship experience will pay off in many ways. These valuable assets may help you deliver a relaxed, articulate job interview or provide you with better admission qualifications for further graduate studies. See Chapter 1, [Professionals in the Academy](#) for more information about professional development.

### *Responsibilities & Range of Duties*

Graduate Assistants are expected to perform duties as assigned by the department chair. In general, the assignments of teaching assistants in laboratory courses will include supervising or assisting in undergraduate laboratories, grading laboratory reports and homework, tutoring, and providing academic support services as needed.

Specific duties may include:

- Instructing during the laboratory period

- Keeping a well-organized, readable, and secure grade book
- Keeping an electronic grade book
- Attending pre-lab sessions or giving pre-lab lectures
- Working at scheduled problem solving sessions
- Holding well-publicized office hours each week
- Attending all TA meetings
- Grading lab reports/homework in a timely manner
- Exam grading or proctoring
- Communicating frequently with the supervising instructor
- Checking your email and departmental mailbox daily for communication from students and/or faculty

You also may be required to:

- Attend all departmental seminars and colloquia
- Perform other services activities such as judging at science fairs

### **Performance Elements of Good Laboratory Instruction:**

Success in laboratory instruction results when you are well prepared for each laboratory session and when professionalism is consistently maintained in the laboratory setting. Active hands-on learning, the goal of any laboratory, is best accomplished when you are experienced with all aspects of the experiment being performed and are able to anticipate problems and effectively troubleshoot.

As a graduate teaching assistant in the laboratory sciences at Ball State, your job may include teaching laboratory sections where you guide students in running the experiments and/or preparing the lab experiments on a weekly basis. You may also be responsible for grading of laboratory reports, quizzes, and lecture assignments.

Your goals in laboratory teaching should include emphasizing important basic concepts and principles in the discipline, demonstrating good basic laboratory technique, and explaining sound methods for data collection and analysis. Depending on your responsibilities in the laboratory course (e.g., teaching a lab section, assisting the professor in lab sections, or preparation of laboratory materials only), the following advice, suggestions, and tips will help you to be an effective and successful laboratory teaching assistant.

### **Communication with the Course Professor:**

Before the beginning of each term, identify the professor who teaches the class you are assigned to and make an appointment to talk with him/her about the responsibilities of the class.

You should have a clear idea of the professor's expectations and the needs of the class after this meeting. Be sure you know 1) if you are teaching a laboratory section yourself, 2) are assisting in the lab and therefore need to be present during the laboratory even though the professor is there, or 3) if you are expected to prep the laboratory in advance.

Continue to talk frequently with the professor during the course of the term. A weekly meeting is often required by the professor but, if not, be sure to contact him/her to determine if there are any changes or needs for the laboratory.

### **Pre-Laboratory Preparation:**

Become familiar with the laboratory and the prep area where you will be working.

Carefully prepare any solutions required for the lab and set up necessary equipment. Be sure to prep extra supplies, if the budget allows, since students often make mistakes in the lab and need to repeat procedures.

Test the equipment to be sure it is in working order and run the lab yourself in order to be sure that the laboratory will work for the students. This will help you to explain more clearly to the students how to perform the procedures and the purposes of particular pieces of equipment or solutions. It will also help you anticipate problems and questions.

Review the lecture concepts being taught in the lab especially if you are teaching the lab yourself or need to be present and assisting in the lab with the professor. You will need to explain and reinforce these concepts with the students. Anticipate the questions students may ask about the principles being demonstrated and the mechanics of the experiment. Prepare yourself with any additional background information that may be helpful.

Prepare any quizzes or handouts well in advance of the lab if this is one of your responsibilities.

Establish office hours when you will be available for the students to contact you if needed.

Check your department mailbox as well as your e-mail for communications from both the course instructor and your students.

### **Laboratory Sessions:**

The following suggestions will be helpful if you are responsible for teaching or assisting the professor in a laboratory section. The first couple of laboratory sessions set the tone for the entire semester. Try to establish the guidelines for the lab and engender the respect of the students early in the semester.

Be on time!! In fact, be early. You should arrive in the lab at least 15 minutes early to ensure that all of the equipment and supplies are ready to go. This is especially true if other sections use the same laboratory before you. This gives you time to re-organize if needed and to greet the students as they arrive. If you are only prepping the lab, be sure to stop by before every session, if that is required, to replenish supplies and check equipment.

Begin the lab on time!! Punctuality is very important. Establish this practice on the first day and stick to it. This encourages the students to be on time or even early. Establish expectations for late arrivals on the first day. Are there consequences for late arrivals? For example, will late students be able to take the quiz that was given at the beginning of lab? If students are chronically late, deal with this out of class by asking to talk with the student and determine if there is a reason for their chronic lateness. Do they have a class on the other side of the campus and only have 10 minutes to get to class or are they just not morning people?

Be cordial and pleasant with the students but maintain a professional demeanor. Dress neatly and conduct yourself so the students will view you as the instructor and not as another student. You need to be able to maintain order in the lab so that the academic goals can be effectively accomplished and so that the students have confidence in you and your ability to teach them the basic principles of the lab.

If required, provide a clear presentation on the concepts being addressed in lab, how they relate to the lecture materials, the procedures being used in the experiment, the expectations for what work needs to

be completed in the given laboratory session, information on the required lab report or homework, and the due date for any assignment. Be sure to clearly point out any hazards that might exist in the lab on a particular day. See the section in this chapter on safety in the laboratory for more information.

Communicate clearly in the class. Good preparation is key to this process. Be sure you take your time and thoughtfully explain concepts, principles, laboratory techniques etc. Be confident enough however to say, "I don't know the answer to that question but I will find out for you and let you know next time"!!!

Students will respect your honesty. You are modeling professional behavior in the lab. Students are also professionals in training and will look to you for developing sound professional habits.

Circulate through the lab during class and talk with the students. Ask them strategic questions about what they are doing and why. Encourage them to communicate back with you using appropriate scientific language and in a clear and understandable way. This will help you to assess if the students understand the materials and the procedures. Also encourage them to talk among themselves about the science of the experiment so as to promote scientific interaction with their peers as well as with you. If students have questions, try to help them to work through their problem and arrive at the answer rather than immediately answering the question for them. You can do this by breaking the problem down into smaller questions for them that will lead to the answer. Point out resources they can use to answer the questions.

Encourage accurate note taking and data collection. Require the students to produce clearly written laboratory reports and homework assignments and establish a grading standard that promotes this goal.

If you are responsible for grading assignments, be consistent with your grading standards and policies and the way that you deal with students. Students will push whenever possible for additional points so it is important to have clear grading rubrics available for students to see if your grading strategies are questioned or challenged. Know what you require as an answer for each question and assign points accordingly. As long as you are consistent in grading, the students will respect your response to their request for a review of their work.

### **Handle problems with students promptly:**

Deal with complaints or problems that involve the entire class during class time. For example, a request to change a due date for a lab report would affect the entire class and should be discussed with everyone.

For complaints involving the professor, refer the student to the professor directly to deal with the problem. You should alert the professor to the problem so that he/she is prepared to deal with the situation.

For student complaints such as grades or other more personal issues that do not involve the rest of the class, ask the student to or make an appointment to see you during your office hours to discuss the issue.

Problems with teamwork assignments must be dealt with carefully. In science, teamwork is often a crucial issue in the workplace. Most laboratory settings in both industry and academia rely on collegial interaction and teamwork. Emphasizing this may help with student participation. Often one or two students bear the weight of the assignment and the others do very little. While you are circulating through the lab, encourage all students to be active participants in the experimental procedures and data collection. Encourage those non-participants to interact by asking them questions about the procedures and create discussion in the lab group. Establish a policy that allows students to assess the contributions of the other students to the work, data analysis, and final report if a common report is being submitted and the same grade will apply to all. If nonparticipation continues to be an issue for a particular student, talk with that student privately to explain your concerns and establish clear expectations for the student.

Be clear on the clean up responsibilities of students. Explain the procedures for washing glassware and storing equipment if students are required to do these things. Enforce the clean up rules beginning with the first lab so that students take their responsibilities seriously.

### **After the Lab:**

Clean up after yourself in the lab. Return equipment and supplies to appropriate locations so that the lab will be ready for the next lab session. Clean glassware, tools etc. if this has not been done by the students. Be sure that equipment is still in working

order. Replenish any supplies and solutions for additional lab sessions if needed.

If it is your responsibility, grade lab reports and assignments promptly and consistently so that they can be returned in a timely fashion and so that the students can benefit from your comments.

Take time to evaluate the lab and your performance. What went well and what did not? What could you do to improve the experience for the students the next time? Are there procedures that need to be modified? Do you need to modify your presentation in any way to more clearly explain concepts?

Communicate with the course instructor concerning the lab for that week. Comment on what went well and what did not. Let the instructor know if additional supplies need to be ordered for this particular lab providing accurate information on catalogue numbers and names of items.

Remember that the laboratory is an excellent learning opportunity for students to visualize more abstract concepts in your field as well as to learn scientific approaches to research. A great laboratory experience can help a student to excel in a difficult class. This works best when you, the Teaching Assistant, are well prepared, maintain a positive attitude toward the class and the science, encourage student participation and create a cooperative, comfortable atmosphere for learning.

### *Safety in the Laboratory*

The safety of everyone working in the laboratory is a paramount concern. By necessity and by design, students in the basic and applied sciences work with potentially hazardous chemicals and biomaterials, glassware, mechanical and electrical equipment, electronic instrumentation, heat sources, lasers, and many other things that can potentially cause injury. Secondly, it is a fact of life that we all become ill at times we do not choose, for example, while in the laboratory. If an injury to a student or a health event occurs while you are serving as the laboratory assistant, you must take timely and appropriate action. What will you do if a student in your laboratory suffers a chemical splash to the face, sustains a laceration or steam burn, or experiences an electrical shock? If a student faints or has a seizure, what actions should you take?

Responding appropriately requires you to know what to do under the specific situation, who to contact for help and how to contact them, and what follow-up actions are necessary. The potential for injury is, of course, common to commercial and industrial settings as well as the university laboratory and both general and specific safety guidelines, procedures and policies have been established by many organizations. In particular, your department may issue instructions and procedures for you to follow in case an injury or health event occurs. You will undoubtedly be alerted to the location and contents of first aid kits and/or safety kits in the laboratory or its vicinity. You will want to know in advance the location of a telephone you can use and the telephone numbers (hopefully posted) you may need to call. If your department does not provide information on safety and health issues, ask the department chair and/or your professors for guidance. Note that if an injury or health event occurs in your laboratory, you will not have time to look up and study the information you have been provided. You must read the guidelines and have a general understanding of what to do before you begin your laboratory service. (See the chapter Appendices for sample safety documents.)

In general, you should report all safety and health incidents to your department and to the course professor immediately after an event. You may be asked to fill out a report form or forms, so, if possible, you should know the student's name, the course and laboratory section, the date, time, place, and nature of the event. You should be able to provide details about the actions taken to address the situation.

The laboratory session during which a safety or health event occurs may be significantly disrupted, depending on the nature of the event. After resolution occurs with appropriate care provided for the affected individual(s), you should return the laboratory to normal as soon as possible. Obviously, the requirements of the impacted laboratory activities may be affected and you should consult with your course professor, if possible.

Finally, what will you do if you suddenly become ill or injured while leading the instructional laboratory session?

### *Summary*

In this chapter we have attempted to orient and assist you, a new graduate laboratory assistant, in knowing about your role, responsibilities, and duties in the instructional laboratory. We hope you noted the importance placed on the unique and essential learning contributions made in the laboratory to the education of a Ball State University student, and hence, the significance of your service. In executing your laboratory responsibilities, you advance your own professional development by immersing yourself in the culture of your department and by improving your technical and people skills. We have tried to give you a “heads-up” on the kinds of laboratory-related activities in which you may participate so you will not be surprised if you encounter this variety in your assignment. The critical element of early and frequent communications with your professors and your department was stressed and, if you follow this advice, you will find far fewer hindrances to a good start. Pre-lab preparation was highlighted as crucial to your success in helping students learn and cannot be over-emphasized. So, please prepare, prepare, prepare! To establish expectations and keep you from going into that laboratory environment “cold”, we discussed practical aspects of what to do before,

during, and after laboratory sessions, especially for the initial labs. Although you will find that each lab class presents new challenges, follow this advice on the generic features of conducting lab sessions and you will quickly gain the respect of students and faculty alike! In the real world of the laboratory, working with electrical equipment, mixing chemicals, handling biomaterials and fluids, and using heat sources, e.g., can result in injuries to your students. Moreover, sudden health events involving students in your lab may occur. We urge you to use the safety information included here to help prepare yourself for that eventuality. Then you will know what to do and how to address the situation for the benefit of your students and you.

Your mission as a graduate laboratory assistant is to help provide our students with the highest possible quality of learning experiences in our instructional laboratories. When you have questions or need further guidance, your department and your professors stand ready to assist you.

### *Appendices: Lab Safety*

#### **Safety Rules for the Lab:**

- Know the location of fire extinguisher, fire blankets, safety showers, and eye wash stations. You, as lab instructor, should point these out in the beginning of the lab course.
- No food or drink is allowed in the lab.
- Report all accidents and/or spills to the faculty instructor immediately.
- Read all labels carefully.
- Instruct students to work under the hood area of the lab bench, especially with noxious or flammable liquids or gases.
- Do not use flammable liquids near an open flame, (e.g., ethers, alcohols).
- Never pipet by mouth. Use a pipet device.
- Do not taste any chemical or chemical product in the lab.
- No unauthorized experiments will be allowed.
- No dangling jewelry should be worn in the lab.
- Long hair should be confined by tying back or wearing a hat.
- No open-toed shoes or flip-flops in the lab.
- Have students place back-packs, coats, etc. in designated storage areas, off the floor and well out of high traffic areas.
- In chemical labs, safety goggles must be worn, and protective clothing or lab coats may be required.
- No horseplay in the laboratory.
- Never let students work alone in the lab.
- Inspect all electrical equipment (hot plates, heaters, stirrers, ovens, extension cords, etc.) before use to ensure that cords and plugs are in good condition, (e.g., not worn, twisted, frayed, abraded, corroded, or with exposed wires or missing ground pins). Equipment with damaged or defective cords or plugs should be taken out of service immediately to be repaired by qualified personnel.
- Never handle electrical equipment when hands, feet, or body are wet or perspiring or when standing on a wet floor.

**Universal Precautions:**

Procedures for Handling Spilled Blood and Body Fluids

Step 1: Put on disposable gloves (latex or vinyl).

Step 2: Use paper towels to absorb spill.

Step 3: Place used towels in leak-proof plastic bag.

(Extensive spills-use RED plastic bag).

Step 4: Flood area with bleach solution,\* alcohol or a dry sanitary absorbent agent.

Step 5: Clean area with paper towels, vacuum, or broom and dustpan.

Step 6: Place used towels, vacuum cleaner bag, or waste in a leak-proof plastic bag.

Step 7: Remove gloves- pull inside out.

Step 8: Place used gloves in bag and tie.

Step 9: Wash hands with soap and water for at least 10 seconds.

\*Bleach solution = 1 part bleach to 10 parts water

Indiana AIDS Hotline: 1-800-848-AIDS

### Accidents in the Laboratory

#### Fire---What To Do:

1. Should a fire occur in a small container such as a beaker, a watch glass may be placed over the beaker to smother the flame or it may be pushed into the sink and extinguished with tap water.
2. For a larger fire on the bench top or floor, use a fire extinguisher aimed at the base of the flame. Caution: Be careful that the blast from the extinguisher does not spill more flammable material by knocking over other containers that could result in a larger fire.
3. In the event of an uncontrollable fire, use the fire extinguishers to clear a path to the nearest exit. Pull the fire alarm located in the hallway and exit the building. All doors should be closed but not locked.
4. If clothing should catch on fire, extinguish it by use of the sink, rolling on the floor, standing under a shower, or use of a fire blanket, whichever is the quickest method.
5. Contact the faculty instructor as soon as possible.

#### Thermal Burns of the Skin:

1. For minor burns, place the burned area under a stream of cold water to relieve the pain and prevent further damage. For the minor burn one can apply burn ointment obtained from the stockroom. The student should be urged to go the Health Center for further treatment. If a blister has occurred do not break the skin since infection may result.
2. MAJOR BURNS REQUIRE PROFESSIONAL TREATMENT!!! You, the lab instructor should do the following:
  - a. Call 5-1111 and give all information to the police as to what happened, where the injured person is located, what the injuries are, and transportation needs for taking the student to the hospital.
  - b. A major burn can result in the injured person going to shock. Calm the person.
  - c. Have them lie down if possible and cover the burn area with dry gauze to relieve pain by excluding air. DO NOT use any salve or ointment on the burn area. Keep the injured person warm by using the fire blanket.
3. Contact the faculty instructor as soon as possible.

#### Broken Glassware:

1. Be cautious of jagged edges and what may have been in the broken container, (e.g. a corrosive, a caustic, poison). If only glassware is involved, obtain a broom and dust pan at the stockroom door and place the broken glass in the special metal drum located at the front of the lab.
2. If a reagent is involved in the breakage, the solution may have to be neutralized before cleanup. The instructor will aid in the cleanup of such a spill with help from the stockroom if needed.
3. Broken mercury thermometers have other hazards besides the possibility of a cut. If necessary, ask your faculty instructor to arrange for proper clean-up.

#### Cuts: Major and Minor:

BE SURE TO WEAR GLOVES BEFORE TREATING ANY CUT OR OPEN WOUND. THESE ARE LOCATED IN THE DESIGNATED AREAS OF THE LAB AND ARE TO USE FOR THIS PURPOSE ONLY.

1. FOLLOW ALL PROCEDURES FOR THE SAFE HANDLING OF BODY FLUIDS. All cuts, no matter how minor, are to be reported to the instructor. Minor cuts can be cleansed with soap and

- water. To stop bleeding, apply direct pressure on the wound with a sterile pad available from the stockroom. Apply band aid or suitable dressing if needed.
2. A severe wound with profuse bleeding must be treated quickly. Place a clean gauze pad directly on top of the wound and apply steady firm pressure. If bleeding continues after direct pressure is used, apply pressure at the nearest pressure point to the wound with elevation of the wound above the heart level if possible. The last possible method of stopping of the blood flow is the use of a tourniquet. This should be applied in a life and death situation only, and with the quick availability of professional help on campus, it may never have to be used. As soon as a severe cut occurs the campus police should be called at 5-1111 with the information about what has happened, where the injured person is located, and where transportation is to be provided.

### Chemical Spills on an Individual

1. Spills on clothing: Remove the contaminated clothing quickly. Quick reaction time is essential to keep the chemical from soaking through the clothing onto the skin. A lab coat or smock will help shield the splash from the body.
2. Spills on the skin: Immediately wash off the skin with water for at least 15 minutes. Small spills may be washed off at the sink area. A large spill may require the use of the safety shower. To use the shower, stand under shower head and pull the chain. The shower flows about 50 gallons per minute therefore use it in emergencies only. DO NOT use any solution to neutralize the spill on the skin. Water is the best and only method of treatment. The individual can be taken to the Health Center by campus police for treatment. The telephone number of campus police is 5-1111. Tell the police:
  - a. Where you are calling from, (i.e., Chemistry Department-Cooper Science Building)
  - b. What has happened, (i.e., sulfuric acid spill on the student's arm)
  - c. Where to send the police car or van (i.e., the main entrance of Cooper Science on Riverside).
3. Stay with the student from the time of the accident until they are transported to the Health Center or until someone relieves you of that responsibility (such as a professor, another instructor, or stockroom personnel).
4. Splash in the eyes: Potentially the most dangerous accident can be a splash in the eyes. Quick reaction time is essential. A person with a chemical splash will be disoriented. Even though s/he knows the location of the eye wash s/he may be temporarily blinded. It may take two or more students to rush the student to the eye wash. The natural reaction of the eyes is to close when under a stream of water. Therefore someone will have to hold the eyes open so that the water can wash the chemical out of the eye. Wash the eyes in the eyewash for at least 15 minutes. Again call campus police as soon as possible giving them the information as previously discussed under spills on the skin. The injury may be such that transportation to the hospital is required. This will be determined by the Health Center.
5. In the event of any splash or spill, the Health Center will need to know what chemical or chemicals were involved. You should call the Health Center (5-8431) after the campus police (5-1111) to inform them that the student is on his way for treatment.
6. Contact the faculty instructor as soon as possible.

### Electrical Accidents:

1. Know the location of electrical panels and disconnect switches in or near the laboratory so that power can be quickly shut down in the event of a fire or electrical accident. To enhance safety, post the location of the electrical panel on the equipment it services.
2. In an electrical emergency, if a person received an electrical shock, do not touch the equipment, cord, or person. Call 911 so that the Fire Department can treat the injured person and evaluate the situation. If safe and possible, shut down the main power source.

To: Ball State University Employees  
From: Gene Burton, Director of Public Safety  
Date: May 7, 2004  
RE: Health Care Transportation

The BSU Department of Public Safety will provide a (student/employee driven) vehicle for the transportation of students who have become ill or who have suffered minor injury while on the BSU campus. The service will be provided Monday through Friday, from approximately 8 am to 5 pm, by calling 285-1111.

The purpose is to provide a strictly non-emergency transportation from BSU facilities to the Health Center (and return) for the treatment of unexpected medical problems. The service is not intended to provide transportation to and from classes, the pharmacy, or to scheduled medical appointments.

Individuals who are experiencing simple cold or flu symptoms, or other minor aches and pains should seek alternate transportation whenever possible.

Guidelines for the use of the service are as follows:

- A. Patients must be able to walk to and from the vehicle unassisted.
- B. Drivers will not administer first aid treatment. Open injuries should be bandaged or dressed.
- C. The Department of Public Safety reserves the right to refuse service when the patient's condition necessitates an EMS response and/or transport.

In the event of a serious injury or acute illness on campus, an ambulance, paramedic, or police officer may be summoned by dialing 285-1111 or 911. EMS units should be requested when any of the following conditions exist:

- Chest pain or respiratory difficulty
- Profuse bleeding or trauma
- Obvious fracture or severe pain associated with movement
- Seizure, disorientation, or loss of consciousness
- Severe burns or shock.

The student/employee who will be driving the transport vehicle will be involved in other duties around campus. Users of the service may experience a short wait and may be asked to leave their name and phone number with the dispatcher so that they can be contacted when the vehicle is available.

To: Ball State University Employees

From: Gene Burton, Director of Public Safety

Date: May 7, 2004

RE: Elevator Breakdown - Evacuation Procedures for Persons with Mobility Impairments

Many questions have been asked about the subject of evacuation procedures for those in wheelchairs (or others who cannot use the stairs) if the elevators are not functioning. This memo is written to clarify some of those questions concerning this important issue.

If a malfunction occurs and there is a wheelchair user on the upper floor, contact should be made with the Physical Plant Work Control Center, 5-5081. Physical Plant personnel will be able to summon an elevator repairman and give an estimated time for their arrival. Advise the location of the stranded person, so that either the elevator repairman or a physical plant worker can advise when the problem is repaired. If the repair will be accomplished in a reasonable period of time and depending on the time of day, the student may choose to remain in the area rather than be carried.

If it appears that evacuation is required, the University Police should be contacted at 5-1111. University students, staff, faculty or other untrained persons should not try to effect evacuation unless an emergency, as this may be a dangerous procedure and there are liability risks. If the breakdown should happen after office working hours the University Police Department should be called immediately at 5-1111.

In case of an alarm or other emergency, call the University Police immediately and indicate the location of the disabled person. Please have the person stay in the area indicated so emergency personnel can make contact with them. Emergency personnel on the scene will make the decision concerning evacuation. You are to remain in personal contact with the person while awaiting the authorities.

### References

- Allen, R.R. and Rueter, T. Teaching Assistant Strategies. Dubuque: Kendall/Hunt Publishing Co. 1990.
- Lovitls, B.E. (2001). *Leaving the Ivory Tower: The Causes and Consequences of Departure from Doctoral Study*. Londham, MD: Rowman and Cittlefield.
- TA's as Teachers: Chapter 3, Special Teaching Topics for TA's. <http://www.id.ucsb.edu/IC/TA/hdbk/ta3-3.html>. Accessed 2/17/04.