



THE UNIVERSITY
OF IOWA

Department of Physics & Astronomy

2009 Graduate Student

Orientation Manual

Graduate Handbook “Table of Contents”

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Orientation

1.1 General Information

1. KEYS (203 VAN)

Key cards are located in the hanging tray on the left of the mail counter in 203 VAN (General Office). Take one, fill it out and have your supervisor or advisor assist you in determining your need for keys to the building. When requesting particular keys; list the rooms you want access to, not the keys someone tells you to get, i.e. group or GM keys. Generally speaking, you will need an entrance key, office key, work area key, and, if you are a faculty member or research staff member, a library key (library keys must be obtained from the librarian, Lisa C. McDaniels). After you have the card signed by your supervisor or advisor, bring the card to room 203 to pick up your keys. **Do not sign the key card until after you receive the keys.**

Students will be charged a \$5/key deposit with a \$15 maximum. Refundable when all keys are returned. Loss of keys or failure to return keys when you leave the Department will result in forfeiture of your deposit.

Staff and Research Scientists will be charged a \$5/key deposit with a \$25 maximum. Refundable when all keys are returned. Loss of keys or failure to return keys when you leave the Department will result in forfeiture of your deposit.

2. MAIL (203 VAN)

Non-faculty members share a mailbox with other members of the Department. Campus mail is delivered twice daily. Pick-up and delivery is handled in 203 VAN. Campus mail is picked up and delivered around 9:30 a.m. and around 1:30 p.m. Outgoing campus mail should be placed in the box marked "Campus Mail" in 203 VAN (bottom left corner).

U.S. mail is picked up and delivered around 9:30 a.m.; it is also picked up with the campus mail at 1:30 p.m. Stamped outgoing U.S. mail should be placed in the box marked "U.S. Mail Outgoing" in room 203 VAN (bottom row – 2nd from the left). Unstamped outgoing U.S. mail goes in the box on the floor by the mailboxes under the sign "U.S. Mail Customer # Required" in room 203. **(Be sure to put a customer number on the envelope. See Joe if you have a question about your customer number.)**

DO NOT PICK UP YOUR MAIL WHILE IT IS STILL BEING DISTRIBUTED!

3. PERSONNEL FORM AND DIRECTORY (203 VAN)

You will need to get a departmental directory update form from Heather in room 204; fill it out and return it so your name may be added to the departmental directory. If you have questions about filling out the form, take it to your advisor or supervisor. **If you change offices or your home address at any time, please inform Heather.** A yearly directory is issued in the fall. Ask for a copy of the latest issue.

4. GRADUATE STUDENTS (202 & 203 VAN)

The graduate secretary (Debbie) in room 202 will assist you with forms for the graduate school, your advisor, as well as many other things, or direct you to who you need to talk with.

5. COPYING

Presently, there are two Xerox machines, a shredder, a poster printer and other miscellaneous small office equipment to be used in conjunction with these machines in room 225. A code is required in order to use either of the copy

machines. Check with your supervisor/advisor to determine the account number to use. If you need assistance using any of these machines you should see Joe in room 210C VAN.

Copy jobs for **departmental courses** should be taken to Heather (room 204) to be sent to Copy Center. Copy Center hours are 8-noon and 1-5 p.m.

6. BUSINESS OFFICE (210 and 214 VAN)

As a general rule, if you have questions regarding your wages, medical benefits (for graduate students), vacation or sick leave reports, requisitions, general office supplies, contracts, or proposals, you will need someone in the Business Office. Your supervisor or advisor should direct you to the proper area to obtain assistance. The FAX machine is located in room 210. Various clerks and secretaries throughout the Department are capable of assisting you with this machine.

7. MISCELLANEOUS

There is a colloquium/seminar board outside room 203 VAN. Cards on the board coincide with the Weekly Calendar, which is issued each Thursday morning during the academic year, listing the next week's colloquium and seminars in the Department.

The "Commons Room" (316 VAN) is a study/lounge for use during the week. It is a quiet place to study, rest, or visit. There is a supply of literature in this room pertaining to other schools. There is a bookshelf with supplemental Physics and Astronomy textbooks for your reference also available in this room. Coffee is available here for \$4.00 per month or \$.25 per cup. Coffee dues should be paid in 203 VAN (Please see Heather).

There are clipboards on third floor (next to 301 VAN), which have a supply of posters and forms for graduate schools, B.S. and M.S. job opportunities, and summer job opportunities. There is a clipboard outside 203 VAN with Ph.D. job opportunities and one across from 203 with miscellaneous information regarding special funding or fellowships for undergraduate and graduate students.

8. COMPUTER ACCOUNTS

Computer accounts on the departmental UNIX machine, Newton, are available to all students if desired. Applications for these accounts are located in room 203 VAN.

You are **required** to provide an e-mail routing address to the University for your generic e-mail address "first name-last name@uiowa.edu." You can designate this routing address within ISIS by following these directions:

- Log into ISIS
- Go to My UIowa
- My Email
- Update Email Routing Address
- Enter the address you want your generic address to route to

Please be sure to activate your generic UI email address before you turn in your blue Directory Update form so you can list this address on the form.

See Scott Allendorf in room 216 VAN if you need further assistance doing this or have any questions about computer/email accounts.

1.2 New Graduate Student Checklist

Human Resources Tasks

| | |
|--|---|
| | Human Resources Office- Chris Stevens – 214 VAN |
| | COGS Bulletin Board – Room 210 |
| | W-2 form completed |
| | I-9 form completed |
| | Auto deposit form completed |

Building Tour

| | |
|--|--|
| | Student Computer Rooms – 201 VAN and 665 VAN |
| | Student Lounge – Commons Room – 316 VAN <ul style="list-style-type: none">• Refrigerator• Microwave• Coffee area |
| | Main Office – 203 VAN |
| | Business Office – 210 VAN |
| | Aaron’s office – 211 VAN |
| | Students Records – Debbie’s office – 202 VAN |
| | Heather’s Office – 204 VAN |
| | Chair’s office – Hallsie Reno – 207 VAN |
| | Associate Chair’s Office – Paul Kleiber – 515 VAN |
| | Ron Vogel’s Office- Laboratory Coordinator – 250 VAN |
| | Dale Stille’s Office – Lecture Demonstration Coordinator – 58 VAN |
| | Astronomy Lab Rooms <ul style="list-style-type: none">• 665• 666 |
| | Machine Shop – Mike Fountain – 116 VAN |
| | Student Shop – 107 VAN |
| | Electronics Shop – 518 VAN |

| | |
|--|--|
| | Automated Telescope Facility – Van Allen Hall roof |
|--|--|

Personal Tasks **See Heather in 204 for questions

| | |
|--|--|
| | Your mailbox |
| | Your office and desk |
| | Complete your departmental address form (included in binder) |
| | Complete your course schedule (included in binder) |
| | Keys to Van Allen Hall (request form in 203 VAN) |
| | Coffee club money (if appropriate; \$4 per month) |

1.3 Physics and Astronomy Who Does What

| What | Who | Where | Phone |
|---|------------------------|--------------|--------------|
| Advisory changes | Debbie Foreman | 202 VAN | 5-1687 |
| APS application forms | Heather Mineart | 203 VAN | 5-1688 |
| Change of address forms for the University | Chris Stevens | 214 VAN | 5-1690 |
| Change of address notification for the Department | Heather Mineart | 203 VAN | 5-1688 |
| Coffee fees | Heather Mineart | 203 VAN | 5-1688 |
| Colloquium coordination | Steve Spangler (Fall) | 705 VAN | 5-1948 |
| | Gregory Howes (Spring) | 505 VAN | 5-1221 |
| Computer e-mail accounts | Scott Allendorf | 216A VAN | 5-0003 |
| Copy/Xerox | Joe Loria- 210C | 225 VAN | 5-1692 |
| Course schedules | Debbie Foreman | 202 VAN | 5-1687 |
| Deadlines—Graduate College | Debbie Foreman | 202 VAN | 5-1687 |
| Degree objective changes | Debbie Foreman | 202 VAN | 5-1687 |
| Degree requirements | Debbie Foreman | 202 VAN | 5-1687 |
| Departmental Chair | Mary Hall Reno | 203 VAN | 5-1689 |
| Departmental Associate Chair | Paul Kleiber | 515 VAN | 5-1920 |
| Drop/Add slips | Heather Mineart | 203 VAN | 5-1688 |
| Emergency loans | Heather Mineart | 203 VAN | 5-1688 |
| English requirements | Debbie Foreman | 202 VAN | 5-1687 |
| Equivalent course determination | Debbie Foreman | 202 VAN | 5-1687 |
| FAX (319-335-1753) | Joe Loria | 210C VAN | 5-1692 |
| Funding (TA/RA Requests) | Aaron Votroubek | 211 VAN | 5-0134 |

| | | | |
|--|-------------------|----------|--------|
| Furniture allocation/requests (office) | Heather Mineart | 203 VAN | 5-1688 |
| Graduation information/deadlines | Debbie Foreman | 202 VAN | 5-1687 |
| Health insurance | Staff Benefits | 120 USB | 5-2676 |
| Keys | Heather Mineart | 203 VAN | 5-1688 |
| Lab cards | Heather Mineart | 203 VAN | 5-1688 |
| Lab coordination | Ron Vogel | 250 VAN | 5-1754 |
| Lecture demonstration coordination | Dale Stille | 58 VAN | 5-1833 |
| Maintenance problems | Heather Mineart | 203 VAN | 5-1688 |
| Meeting room reservations | Heather Mineart | 203 VAN | 5-1688 |
| Office assignments (graduate students) | Heather Mineart | 203 VAN | 5-1688 |
| Parking placard | Heather Mineart | 203 VAN | 5-1688 |
| Payroll questions | Chris Stevens | 214 VAN | 5-1690 |
| Personnel questions | Chris Stevens | 214 VAN | 5-1690 |
| Physics library | Lisa C. McDaniels | 350 VAN | 5-3082 |
| | Kerry Minner | | |
| Plans of Study | Debbie Foreman | 202 VAN | 5-1687 |
| Qualifier exams | Debbie Foreman | 202 VAN | 5-1687 |
| Schedule of Courses | Debbie Foreman | 202 VAN | 5-1687 |
| Social activities – departmental | Heather Mineart | 203 VAN | 5-1688 |
| Student computer room questions | Larry Schroeder | 215 VAN | 5-1838 |
| Supplies | Joe Loria | 210C VAN | 5-1692 |
| Tax information | Chris Stevens | 214 VAN | 5-1690 |
| Teaching assignments | Heather Mineart | 203 VAN | 5-1688 |
| Telephone bills | Joe Loria | 210C VAN | 5-1692 |

| What | Who | Where | Phone |
|--------------------------------------|------------------|--------------|--------------|
| Textbook checkout (TAs) | Debbie Foreman | 202 VAN | 5-1687 |
| Thesis handbook | Graduate College | 210 GIHL | 5-2144 |
| Transfer credits | Debbie Foreman | 202 VAN | 5-1687 |
| Travel requests | Joe Loria | 210C VAN | 5-1692 |
| Verification forms/ Short Hours Form | Debbie Foreman | 202 VAN | 5-1687 |

1.4 What if....Emergencies, Trouble Calls and Equipment Malfunctions

335-5071 Facilities Management Work Control Center

- Elevator Problems
- Floods
- Heating/AC Problems
- Most Building Problems
- Power Outages
- Storm Damage
- Snow Removal/Roads
- Bodily Fluids Clean-up (vomit, blood, etc.)

335-5022 Public Safety or 911 for Emergencies

- Ambulance
- Break Ins and Illegal Entry
- Fire
- Personal Injuries
- Theft
- Disruptive Students

335-1754 Lab PC & Equipment Malfunctions (Ron Vogel)

All incidents affecting members of the general public, students or others while on campus which you believe could reasonably result in a liability claim against the University should be reported to the Risk Management and Insurance Department. The [University of Iowa-Incident Form](#) can be used to report all incidents with the exception of incidents within University Hospitals and Clinics, auto accidents or workers compensation claims.

Incident Report Form: <http://www.uiowa.edu/~fusrm/incform.htm>

Please report all incidents along with the incident report form to the Physics and Astronomy main office 203 VAN.

1.5 University of Iowa Who Does What

| | | |
|---|--|--------------------------------|
| WHO DOES WHAT | http://www.registrar.uiowa.edu/ 6/25/2009 | |
| Absence Forms | Registrar's Service Center, 17 Calvin Hall | 384-4300 |
| | http://www.registrar.uiowa.edu/forms/absence.pdf | |
| Canceling Registration | Registrar's Service Center, 17 Calvin Hall | 384-4300 |
| Data Requests & Reports Kathryn Stoltenberg kathryn-stoltenberg@uiowa.edu | Registrar's Office | 384-4030 |
| Dean's List/President's List, | Graduation Analysis, Registrar's Office 1 Jessup Hall | 335-0228 |
| Commencement List & Distinction | | |
| Deceased Student Contact Diane Graber diane-graber@uiowa.edu | Registrar's Office, 1 Jessup Hall | 335-0223 |
| Degree Applications or Evaluations | Graduation Analysis, Registrar's Office, 1 Jessup Hall or Registrar's Service Center, 17 Calvin Hall | 335-0228 384-4300 |
| | http://www.isis.uiowa.edu | |
| Degree Statistics kathryn-stoltenberg@uiowa.edu | Registrar's Office Kathryn Stoltenberg | 384-4030 |
| Insurance Validation, Letter of Good Standing and Enrollment Phone questions/requests by mail-walk-In service | Verifications | 335-0229 |
| | Registrar's Service Center, 17 Calvin Hall http://www.registrar.uiowa.edu/verifications/ http://www.isis.uiowa.edu | |
| Late Registration | Registrar's Service Center, 17 Calvin Hall | 384-4300 |
| Loan Deferments Phone questions/requests by mail-Walk-In Service | Verifications Registrar's Service Center, 17 Calvin Hall | 335-0229 384-4300 |
| | http://www.registrar.uiowa.edu/verifications/ http://www.isis.uiowa.edu | |
| Major Changes If within same college academic programs office If changing colleges: | Student's designated collegiate office <i>or</i> Undergraduate Admissions, 108 Calvin Hall | 335-1549 |
| Notary Public Registrar's Service Center, 17 Calvin Hall | Registrar's Office, 1 Jessup Hall | 335-0238 |
| Pass-Fail, Pass-Nonpass Registration academic programs office | Student's designated collegiate office <i>or</i> | |
| Forms available: | Registrar's Service Center, 17 Calvin Hall | 384-4300 |
| Record, Permanent Registrar's Office, 1 Jessup Hall | Student Records | 335-0239 <i>or</i> 335-0226 |
| Scores for ACT, SAT, GMAT, GRE, TOEFL Phone questions/requests by mail - Walk-In Service | Verifications | 335-0229 |
| | Registrar's Service Center, 17 Calvin Hall http://www.registrar.uiowa.edu/verifications/ http://isis.uiowa.edu | |
| Student Identification Number | Registrar's Office, 1 Jessup Hall | 335-0239 |

Changes

mary-grimm@uiowa.edu

Verification of Tuition

Registrar's Office, 1 Jessup Hall

Voids (registration)

Workshop Registration for Summer Session

Mary Grimm

Student Records

335-0226

Registrar's Service Center, 17 Calvin Hall 384-4300

Registrar's Service Center, 17 Calvin Hall 384-4300

Academics

2.1 Degree Requirements

Effective Fall 2004

The physics and astronomy Master of Science degrees are offered with either thesis, critical essay or by examination. The degrees may be terminal or an intermediate step toward a Ph.D. In all cases, the final examination is oral, conducted by a committee of three members of the graduate faculty approved by the dean of the Graduate College.

The program for the M.S. with thesis requires a thesis based on an original experimental or theoretical investigation by the candidate. The program for the M.S. with critical essay requires an independent study of the literature on a chosen topic, and preparation of a critical essay on that topic. The program for the M.S. by examination (physics only) requires an examination by the committee on general topics in physics.

Master of Science in Physics

1. For the M.S. with thesis or with critical essay, the candidate must complete a minimum of 30 semester hours of graduate work in courses number 170 or above, of which at least 15 semester hours must be at the 200 level, with an average GPA of 3.0. For the M.S. by examination, the candidate must complete a minimum of 30 semester hours of graduate work, with 18 semester hours earned in 29:205, 212, 213, 214, 245 and 246, and the remaining 12 semester hours in courses number 170 above, and with an average GPA of 3.0 or better. For the M.S. with thesis no more than 6 of the minimum 30 semester hours may be in 29:220 and 29:281, and for the M.S. with critical essay or by examination no more than 4 hours. Seminars do not count toward the 30 semester-hour requirement. Up to one-third of the coursework may be in graduate courses in related scientific fields other than physics and mathematics.

2. Prepare a thesis or critical essay and pass the Final Examination; by examination, pass the Final Examination.

Master of Science in Astronomy

1. Candidate must complete a minimum of 30 semester hours of graduate work in courses numbered 170 or above with at least 15 semester hours at the 200 level, and an average of B (3.00) or better. The 30 semester hours must include at least 6 semester hours chosen from 29:232, 29:233, 29:234, and 29:235. For the M.S. with thesis no more than 6 of the minimum 30 semester hours may be in 29:220 and 29:282 and for the M.S. with critical essay no more than 4 hours. Seminars do not count for credit toward the 30 semester-hour requirement. Up to one-third of the coursework may be in graduate courses in related fields such as meteorology and electrical engineering.

2. Prepare a thesis or critical essay and pass the Final Examination.

2.3 Expectation for Enrollment as Full-Time Student

2.4 Time to Degree

2.5 Qualifying Exam

Faculty resolution concerning the timing of graduate student progress toward the Ph.D.

October 7, 1997

1. Comprehensive exam

We emphasize the nature of the comprehensive exam, which requires the student in the early stage of research to present and defend a thesis proposal. It is not necessary for the student to guarantee that all aspects of the proposal will work, because that would require the research to be essentially done. It is also not necessary for the dissertation to be on the same topic that he/she defends at the comprehensive exam, should research take a different, but justifiable, direction. It is required that the student exhibit understanding of the literature in the specific area and the underlying physics principles related to research in that area.

In addition we establish the following new requirements for the comprehensive exam:

- A student must pass the comprehensive exam before the date the qualifier is given at the beginning of his/her fourth year.
- Students who have been here for more than one year must pass the comprehensive exam before the date the qualifier is given at the beginning of the 1999-2000 academic year.
- Students who fail to pass the comprehensive exam by those dates must retake and pass the qualifier immediately thereafter to remain in the graduate program.
- Exceptions/extensions can only be granted by the EO committee (or during a full faculty meeting) after a petition by the supervising faculty member is submitted.

2. Progress toward a degree after the comprehensive exam

In order to assure that students make timely progress toward their degrees we resolve to use the student's advisory committee to establish some oversight over the student's progress toward a degree. Specifically,

- The student should meet with the internal (Department of Physics and Astronomy) members of his/her thesis committee once every academic year to present the status of his/her dissertation research.
- Through the sixth year this meeting is intended only as a status check for the student, advisor, and committee.
- During the seventh and subsequent years this meeting should be viewed as an application by the student for permission to continue his/her research in the graduate program. Depending on the student's progress this application may be granted or denied; however, barring exceptional circumstances, the request should be expected to be denied after meeting in the eighth or subsequent years.

2.6 Comprehensive Exam Guidelines

Scheduling the Comprehensive Examination

- It is expected that the Comprehensive Examination will be taken approximately one year after successful completion of the Ph. D. Qualifying Examination.
- The student must pass the comprehensive exam before the date the qualifier is given at the beginning of his/her fourth year.
- A copy of the written proposal should be given to each committee member at least two weeks prior to the scheduled oral examination.

Selection of the Comprehensive Examination Committee

The Comprehensive Examination Committee will be determined by the advisor, in consultation with the student. This committee must be approved by the Departmental Executive Officer and will also serve as the student's Final Examination Committee.

The Comprehensive Examination Committee will consist of five members as follows:

- the student's advisor, who will serve as chair of the committee;
- three additional members from the Department of Physics and Astronomy;
- one member from outside the Department.

Once the Committee has been approved by the DEO and at least two weeks prior to the exam, the following information is provided to Debbie Foreman:

- names and titles of committee members;
- date, time and location of exam (the location is scheduled with Heather Mineart in 203 VAN);
- completed Doctoral Plan of Study (form obtained from Debbie).

Format of the Comprehensive Examination

The comprehensive examination is an evaluation of the prospective thesis topic and the student's mastery of subjects in the research area of the proposed thesis. The examination will consist of a written thesis proposal and an oral defense of the proposal to the Comprehensive Examination Committee.

The proposal, which should be prepared in close consultation with the student's advisor, must demonstrate significant and thoughtful consideration of the thesis problem and clear evidence that the student is prepared to embark on research in the proposed area.

While the details of the proposal format are intended to be flexible, it is strongly suggested that the student include the following elements:

- 1) an overview of the proposed research
- 2) a clear statement of why the problem addressed by the research is important
- 3) a survey of related literature
- 4) a discussion of the placement of the proposed research in context with previous related research
- 5) an outline of methodology to be used, and
- 6) an overview of any progress to date.

The general guidelines of the Graduate College apply to all other aspects of the examination.

Research Orientation

3.1 Research Groups

The Department of Physics and Astronomy has research in a number of areas, including

- [Astronomy and Astrophysics](#)
- [Atmospheric and Environmental Physics](#)
- [Condensed Matter and Materials Physics](#)
- Nuclear and Particle Physics
 - [Experimental](#)
 - [Theoretical](#)
- [Photonics and Quantum Electronics](#)
- [Plasma Physics](#)
- Space Physics
 - [Particles and Electric Fields](#)
 - [Particles and Imaging](#)
 - [Pioneers 10 & 11 Geiger Tube Telescope](#)
 - [Plasma Waves](#)
 - [Theory and HYDRA](#)

Students are encouraged to meet with faculty in these areas and to visit the group web pages listed at <http://www.physics.uiowa.edu/research/> .

Teaching/Teaching Resources

4.1 TA Orientation/Overview

Teaching/Research Assistantship Appointments

Aaron Votroubek, Room 211, is responsible for the coordination of teaching and research assistantship appointments. The terms and conditions of employment for graduate assistant employees are spelled out in the agreement between the Iowa State Board of Regents and the United Electrical, Radio and Machine Workers of America, Local 896-COGS, as well as in your offer letter.

Teaching Assistantship Appointments

The Department has recently averaged 26 teaching assistantships per year. The number of assistantships is determined by the enrollment size of the undergraduate courses and staff needed for grading and assisting in the tutorial room.

The departmental criteria for awarding a teaching assistantship appointment are as follows:

Evaluations

Evaluations of the teaching assistants are done by the instructors of the courses, the laboratory coordinator, and the undergraduate students through the Assessing the Classroom Environment (ACE) form and TA Performance Evaluations. The instructors' and the laboratory coordinator's evaluations are ongoing, whereas the students' evaluations are done at the end of every semester. These evaluations are reviewed by the associate chair of the department and assist in the determination of successive appointments.

Progress

It is expected that a teaching assistant will maintain steady and reasonable progress toward a degree. This is measured by taking into account both the grade point average as described by the Graduate College (2.75 for an M.S. degree objective and 3.0 for a Ph.D.) and adequate progress in course work and/or an individual research project. Students with assistantships are required to take a minimum of six hours during each semester of the academic year; course schedules should be worked out with a faculty advisor, and the departmental office staff will monitor and report each student's status.

Language Requirement

- Each teaching assistant must also meet the language requirements of the University. For those who English is a second language, a rating by the ESL Program is required.*

If this is your first appointment as a teaching assistant and English is not your first language, you are required to demonstrate your effectiveness in English speaking and comprehension skills for teaching undergraduates in a United States university classroom situation before you are assigned teaching assistantship responsibilities. The English as a Second Language Programs Office will evaluate your language skills for this purpose. You will first take a test to evaluate your general spoken English proficiency (SPEAK test) that is given in a language laboratory setting and recorded on audiotape. If you score at least 50 on the SPEAK test, you will take the ELPT test to assess your language in the context of a teaching assistant. For the ELPT test, which is recorded on videotape, you will present a brief lecture on a topic in your discipline. You will also be asked questions related to your lecture. Pre-registration is required. The registration form can be obtained from Debbie Foreman in 203 Van Allen Hall. The results of these evaluations will determine whether you are assigned full responsibility for teaching a course, or whether you are conditionally certified to teach discussion or lab

sections, or to grade papers. Those who are conditionally certified must take appropriate English language courses (TAPE program) or be evaluated further to be unconditionally certified.

- The Iowa Board of Regents has adopted a policy on oral communication competence, designed to ensure that all instructors have "the ability to communicate appropriately in the language of instruction to students attending Regents institutions." All new teaching assistants will be evaluated by the middle of the first semester of teaching, and all teaching assistants will be evaluated at the end of every semester. A question on oral communication competence will be included in the form the department uses for student evaluation of teaching.
- Teaching assistants whose first language is not English are expected by the end of your first year as a teaching assistant to have attained a B certification from the English as a Second Language (ESL) office. The College of Liberal Arts and Sciences will not approve any appointments for a second year teaching assistants who have not met this criterion.

*See section regarding the SPEAK/ELPT examinations administered by the English as a Second Language program.

Research Assistantship Appointments

Research assistantship appointments are awarded by faculty members and are funded from various research grants and contracts. Students are encouraged to define areas of interest and begin to talk with faculty members as their course work progresses so that individual research projects may begin as soon as possible.

Every professor within the Department is contacted early during the Spring Semester as a beginning to the funding process. Currently funded students are discussed as well as funding availability. Also, many of the students are individually contacted. You are encouraged to maintain consistent contact with Aaron (aaron-votroubek@uiowa.edu) so that those in the administrative offices remain fully informed of the funding needs and academic progress of each graduate student.

The objectives of the orientation workshop are to ensure the highest possible quality of instruction in the labs by:

- Providing new TAs with introductory pedagogical training;
- Providing opportunities for experienced TAs to continue to develop their professional skills and to share them with their new colleagues;
- Providing information about new materials and approaches in labs;
- Fostering collegial spirit and a sense of professional identity among the teaching staff;
- Providing information related to resources available to TAs at the University of Iowa and in the Department.

Staff meetings by course

In addition to the training workshop, all TAs must attend weekly TA training meetings throughout the academic year specific to the course they are teaching. These meetings include training and demonstration for labs, lessons, teaching strategies, etc. Failure to attend weekly sessions and completion of lab results can result in disciplinary action. See Ron Vogel (physics) or Steve Spangler (astronomy) for details.

Teaching Assistant Performance Evaluations

The Department requires that all TAs receive an evaluation of their teaching performance. The goals of such evaluations are to continue to improve teaching skills and use appropriate methodologies. These evaluation instruments include completion of an annual performance evaluation and ACE forms each semester.

Teaching Assistant Expectations

Physics

TAs assigned to lab sections

Physics TAs perform under the supervision of the Laboratory Coordinator (Ron Vogel) and the faculty member responsible for the course to which you are assigned. Any or all of the following are activities that TAs typically perform:

- a) Preparing lab activities and teaching the assigned lab and/or discussion sections;
- b) Administering and grading examinations and other written assignments as needed;
- c) Returning all graded assignments promptly (as per faculty member's instructions);
- d) Holding office hours and meeting with students individually as needed;
- e) Arranging for a substitute in case of absence and seeking approval from Aaron Votroubek in advance if possible, or in the case of emergency or sudden illness, soon afterwards;
- f) Attending weekly TA lab meetings (on Fridays) and turning in lab results on Mondays;
- g) Participating in the fall and spring Orientation Workshops;
- h) Participating in departmental TA evaluation procedures (ACE forms). NB: All TAs who are assigned a lab section are responsible for having students complete ACE forms related to their experience in the lab.
- i) Ensuring that students attending your lab are registered for your section;
- j) Conducting all lab sections in accordance with assigned syllabi and methodology;
- k) Creating and maintaining a syllabus with specific requirements;
- l) Behaving at all times in a manner consistent with university policies on sexual harassment, consensual relationships, and human rights;
- m) Sharing ideas and concerns with other TAs and supervisors;
- n) Completing lab cards for all students in physics labs; cards are available from the Heather Mineart in room 203 VAN and are due back to her within two weeks of the last day of class each semester;
- o) Be on time for your assigned lab sections or tutorial hours;
- p) Establish an effective relationship with the course instructor.

Promptness and preparedness are vital to the understanding and administration of a lab course. The students' comprehension of lab procedures and experiments is essential to succeeding in these courses. Therefore, the teaching assistants' responsibility for clarifications and explanations is important. Safety is an important responsibility for the TA. Strictly enforce safety regulations. You must be present in the laboratory at all times even if you only have one student. **DO NOT LEAVE THE LABORATORY FOR ANY REASON WHILE STUDENTS ARE PRESENT.**

Astronomy

- a) Preparing lab activities and teaching the assigned lab and/or discussion sections;
- b) Familiarize yourself with all software packages;
- c) Administering and grading examinations and other written assignments as needed;
- d) Returning all graded assignments promptly (as per faculty member's instructions);
- e) Holding office hours and meeting with students individually as needed;
- f) Arranging for a substitute in case of absence and seeking approval from Steve Spangler in advance if possible, or in the case of emergency or sudden illness, soon afterwards;
- g) Attending weekly astronomy meetings;
- h) Participating in the fall and spring Orientation Workshops;
- i) Participating in departmental TA evaluation procedures (ACE forms). NB: All TAs who are assigned a lab section are responsible for having students complete ACE forms related to their experience in the lab.
- j) Ensuring that students attending your lab are registered for your section;
- k) Conducting all lab sections in accordance with assigned syllabi and methodology;
- l) Creating and maintaining a syllabus with specific requirements;
- m) Behaving at all times in a manner consistent with university policies on sexual harassment, consensual relationships, and human rights;
- n) Sharing ideas and concerns with other TAs and supervisors;
- o) Be on time for your assigned lab sections or tutorial hours;
- p) Establish an effective relationship with the course instructor.

Promptness and preparedness are vital to the understanding and administration of a lab course. The students' comprehension of lab procedures and experiments is essential to succeeding in these courses. Therefore, the teaching assistants' responsibility for clarifications and explanations is important. Safety is an important responsibility for the TA. Strictly enforce safety regulations. You must be present in the laboratory at all times even if you only have one student. **DO NOT LEAVE THE LABORATORY FOR ANY REASON WHILE STUDENTS ARE PRESENT.**

Tutorial Room Expectations

The Physics Tutorial Room is located in room 54 Van Allen Hall.
The Astronomy Tutorial Room is located in room 665 Van Allen Hall.

TAs who are assigned to the tutorial room are expected to help students who are having problems with homework assignments and help students prepare for exams. Students who typically use the physics tutorial room are those enrolled in 29:008, 29:011, 29:012, 29:107, 29:018, 29:027, 28:028, 29:029 and 29:030. Students who typically use the astronomy tutorial room are those enrolled in 29:050, 29:052, 29:061 and 29:062.

How to help students-

- Be friendly and helpful to students.
- Help students develop steps to solve homework problems. Tutorial Room TAs are not expected to, nor should they, solve homework problems for students.
- Work with the students on their level, i.e., talk in a manner that is easily understood.
- Familiarize yourself with the textbooks of these courses by checking with Debbie Foreman in 202 VAN.

You are expected to be on time and present for your scheduled tutorial room hours. If you are unable to attend, it's your responsibility to find a substitute. If an emergency arises that requires your absence, please contact Aaron Votroubek (335-0134 or aaron-votroubek@uiowa.edu). Failure to cover your hours can result in disciplinary action.

Graders

You are assigned a specific amount of grading hours per week for an individual class. This is the average number of hours per week that you are expected to work for this class; the load will likely vary from week to week. In either the week before class or early in the first week of class, you will need to meet with the faculty member in charge of that course to determine how the grading for the class will occur. You may be asked to provide solutions for the problems to be graded or these solutions may be provided to you depending on the individual faculty member. The faculty member will give you specific expectations related to:

- a) which problems to grade and the date they are due back to the faculty member;
- b) how grades are to be recorded and when these should be provided to the faculty member (you are responsible for recording the homework grades);
- c) if you are providing solutions – when solutions need to be made available to the class via web posting, library notebook, etc. – please indicate when the solutions will be available.

The assignment will vary to meet the specific faculty member's needs for the class. It is your responsibility to work with the faculty member to ensure that grading is completed in a timely manner. If the average amount of time you spend on grading responsibilities exceeds the amount assigned, you should inform the faculty member to find a way to accomplish the grading in the assigned amount of time. As with any work situation, you are required to perform your assigned grading tasks regardless of other commitments such as course work or personal time. If an emergency arises that requires your absence, please contact Aaron Votroubek (335-0134 or aaron-votroubek@uiowa.edu) as soon as possible.

Teaching Load

The average teaching load assigned to teaching assistants in physics is three lab sections for one-half time assistantship (18 hours per week); two sections for a one-third time assistantship (12 hours); and one section for a one-sixth time assistantship (6 hours). These assignments may vary because of staffing problems or emergencies. Hours assigned to grading or tutorial are done on an hourly basis according to your appointment. In certain

situations a combination of lab sections, tutorial, and/or grading hours may be assigned, but the hours of work required by such a combination will conform appropriately to your appointment.

The average teaching load for a one-half time assistantship in astronomy is three-four lab sections, one hour of tutorial and two nights of clear sky patrol. Teaching loads for appointments other than one-half time will be adjusted accordingly. Hours assigned to grading, tutorial and clear sky patrol are done on an hourly basis according to your appointment. In certain situations other combinations of lab sections, tutorial, clear sky patrol, and/or grading hours may be assigned, but the hours of work required by such a combination will conform appropriately to your appointment.

Assignments are determined by Aaron Votroubek, the Departmental Administrator, in consultation with the faculty and the Laboratory Coordinator (Ron Vogel).

Summer School Teaching Assistants

A limited amount of teaching assistantships are usually available in the summer for TAs at a stipend equal to 2/9th's of the academic year salary. Eligibility is restricted to continuing students. In addition to strong academic and teaching credentials, appointments made in previous summers are taken into account, in an effort to reward eligible students not previously supported during a summer session. Summer school teaching appointments are made by the Associate Chair and the Departmental Administrator.

University Policies

The Council of Graduate Schools Resolution Regarding Graduate Students, Fellows, Trainees, and Assistants, to which the University of Iowa is a signatory, states that "acceptance of an offer of financial support for the next academic year by a prospective or enrolled graduate student completes an agreement that both the student and the graduate school expect to honor. In that context, the conditions affecting such offers and their acceptance must be defined carefully and understood by all parties." Further, "students are under no obligation to respond to offers of financial support prior to April 15; earlier deadlines for acceptance of such offers violates the intent of the Resolution. In those instances in which a student accepts an offer before April 15, and subsequently desires to withdraw that acceptance, the student may submit in writing a resignation of the appointment at any time through April 15. However, an acceptance given or left in force after April 15 commits the student not to accept another offer without first obtaining a written release from the institution to which a commitment has been made. Similarly, an offer by an institution after April 15 is conditional on the presentation by the student of the written release from any previously accepted offer."

Sexual Harassment (excerpts)

"Sexual harassment is reprehensible and will not be tolerated by the University. Sexual harassment subverts the mission of the University and threatens the careers, educational experience, and well-being of the students, faculty, and staff. The University of Iowa is committed to maintaining an environment that is free of sexual harassment.

The University of Iowa forbids sexual harassment by any member of the University community. Sexual harassment is defined as persistent, repetitive, or egregious conduct directed at a specific individual or group of individuals that a reasonable person would interpret, in the full context in which the conduct occurs, as harassment of a sexual nature, when:

- submission is made or threatened to be made an express or implied term or condition of employment, education, on-campus living environment, or participation in a University activity; or
- submission to or rejection of the conduct is used or threatened to be used to make a decision affecting employment, education, on-campus living environment, or participation in a University activity (such as hiring, promotion, or grading a course); or
- the conduct has the purpose or effect of unreasonably interfering with a person's work or educational performance or creates an intimidating or hostile environment for employment, education, on-campus living, or participation in a University activity.

Behavior that may constitute sexual harassment includes but is not limited to:

- physical assault
- direct or implied threats that submission to sexual advances will be a condition of employment, work status, promotion, grades, or letters of recommendation

- direct propositions of a sexual nature
- subtle pressure for sexual activity, an element of which may be repeated staring
- a pattern of sexually explicit statements, questions, jokes, or anecdotes
- unnecessary touching, patting, hugging, or brushing against a person's body
- remarks of a sexual nature about a person's clothing or body, about sexual activity, or about previous sexual experience
- a display of graphic sexual material where others are not free to avoid it

About Consensual Relationships (excerpts)

The University Policy on Consensual Relationships Involving Students prohibits romantic and/or sexual relationships between faculty (all instructional personnel at the University, including graduate students and instructional staff) and students enrolled in their classes or subject to their supervision. These romantic and/or sexual relationships are prohibited and viewed as unethical even when the relationship appears to be consensual (i.e., both parties have consented). Because of the power imbalance, the voluntariness of the student's consent is subject to question.

Such relationships present a conflict of interest for the parties which significantly impacts the learning or working environment.

Romantic and/or sexual relationships between students and faculty outside the instructional context are discouraged because they also present the potential for conflicts of interest.

University Policy on Human Rights (excerpts)

The University of Iowa brings together in common pursuit of its educational goals persons of many nations, races, and creeds. The University is guided by the precepts that in no aspect of its programs shall there be differences in the treatment of persons because of race, creed, color, national origin, age, sex, disability, sexual orientation, gender identity, or any other classification that deprives the person of consideration as an individual, and that equal opportunity and access to facilities shall be available to all. Among the classifications that deprive the person of consideration as an individual are those based on associational preference. These principles are expected to be observed in the internal policies and practices of the University; specifically in the admission, housing, and education of students; in policies governing programs of extracurricular life and activities; and in the employment of faculty and staff personnel. The University shall work cooperatively with the community in furthering these principles.

Student Disability Services (excerpts)

The University of Iowa is committed to equality of educational opportunity for all students. The Student Disability Services (SDS) facilitates academic accommodations and services for qualified students with disabilities so that these students have equal access to University programs and activities. Through all its efforts, SDS is committed to supporting participation of qualified students with disabilities in all aspects of University life.

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4.2 Sample Syllabi

****EXAMPLE****

Astronomy

29:XXX Course Name – LABORATORY

TA: Jane Doe
Office: 123 Van Allen Hall
Office Hours: 4:00-5:00 p.m. Monday and Wednesday
Phone: 335-1234 (office)
E-mail: jane-doe@uiowa.edu
Webpage: www.optional.edu

Lab Manual: *Manual Name*
Authors

Lab Section: 29:XXX:XXX day start time ~ end time room number

Required items:

You will need your lab manual, your textbook, a notebook, a *scientific* calculator (one that does sin and cos), and a pencil.

Attendance:

Include expectations for attendance as well as any makeup policy you may have.

Dropping the lab or changing sections:

All drop/add slips for this course are processed and signed in the General Office, room 203 VAN. However, I would appreciate it if you would let me know if you are making a change.

Tutorial:

The astronomy tutorial is located in room 665 VAN – the hours it is open are posted on the door or go to <http://www.physics.uiowa.edu/atutorial.html>.

Grading:

Include grading policies (i.e., extra credit, points deducted, etc.).

Report Format:

Include report format expectations.

Miscellaneous:

Include any miscellaneous information that may be helpful to the students.

Complaint procedures:

"Academic Misconduct" and "Student Complaints Concerning Faculty Actions" procedures are available for you review in the Schedule of Courses, pg. 40. The Associate Chair of the Department, Professor Paul Kleiber, can be contacted through the main office - 203 VAN. As stated in the procedures noted above, complaints or comments regarding TAs should first be directed to the instructor.

Students with disabilities:

I need to hear from anyone who has a disability, which may require some modification of seating, testing or other class requirements so that appropriate arrangements may be made. Please see me after class or during my office hours.

****EXAMPLE****

The course instructor MUST approve your syllabus before it is copied for your students

29:XXX Course Name – LABORATORY

TA: Jane Doe
Office: 123 Van Allen Hall
Office Hours: 4:00-5:00 p.m. Monday and Wednesday

Phone: 335-1234 (office)
E-mail: jane-doe@uiowa.edu

Lab Manual: *Manual Name*
 Authors, The University of Iowa

Lab Section: 29:XXX:XXX day start time ~ end time room number

Laboratory: *The course instructor will have the details of the laboratory policies that should be included in this section. Below is an example of the types of items that MIGHT be listed here.*

Attendance is required. A pre-lab and a lab report are required for each lab.

Lab Schedule:

| | | | | | | | | |
|-------------|---------|---------|------|------|------|------|------|------|
| Week | Sept. 2 | Sept. 9 | Etc. | Etc. | Etc. | Etc. | Etc. | Etc. |
| Lab | Exp. M1 | No Lab | Etc. | Etc. | Etc. | Etc. | Etc. | Etc. |

| | | | | | | | | |
|-------------|---------|---------|------|------|------|------|------|------|
| Week | Sept. 2 | Sept. 9 | Etc. | Etc. | Etc. | Etc. | Etc. | Etc. |
| Lab | Exp. M1 | No Lab | Etc. | Etc. | Etc. | Etc. | Etc. | Etc. |

Laboratory Organization:

Beginning of period: your answers to the pre-laboratory questions will be collected
 First 20-30 minutes: discuss lab, explain apparatus and procedure
 Rest of lab: perform lab and write lab report
 End of period: turn in lab report

- ID for instruments
- ***Do not load any software on the PC or change PC settings***
- Turn off the apparatuses after use.
- Clean the lab bench before you leave. I will check your lab bench before I give you any credit for clean up.

Tutorial:

The physics tutorial is located in room 54 VAN – the hours it is open are posted on the door or go to <http://www.physics.uiowa.edu/ptutorial.html>

Complaint procedures:

"Academic Misconduct" and "Student Complaints Concerning Faculty Actions" procedures are available for you review in the Schedule of Courses, pg. 40. The Associate Chair of the Department, Professor Paul Kleiber, can be

contacted through the main office - 203 VAN. As stated in the procedures noted above, complaints or comments regarding TAs should first be directed to the instructor.

Makeup labs:

Students are not allowed to attend sections they are not registered for (makeup labs) except under the following conditions.

1. The student must have permission from the professor, both TAs involved, and, for physics labs, the laboratory coordinator. Permission must be requested at least one week in advance except in the case of an emergency.
2. No student can go into a section that is already full.
3. No more than one "visiting" student in any lab section at a time.

Permission is not automatic and may be denied due to lack of equipment, experiments requiring close TA scrutiny, or other circumstances.

As stated in the University's Course Exam Schedule Conflict Policies: "When there is a conflict between an exam scheduled outside of class time and a regularly scheduled course, the regularly scheduled course will take precedence." It is up to the instructor of an exam scheduled outside regular class hours to arrange a makeup exam for the students who have a schedule conflict.

Students with disabilities:

I need to hear from anyone who has a disability, which may require some modification of seating, testing or other class requirements so that appropriate arrangements may be made. Please see me after class or during my office hours.

Lab tips:

1. Read the lab beforehand. It may seem boring, but it will enable you to work more efficiently during lab. That is important as most of these labs run about three hours.
2. If you get stuck: a) Stop and think about what you are doing. b) Read the manual. There are detailed instructions that cover most aspects of the lab. c) Do not hesitate to ask me for help.
3. Do the labs neatly; you will score better.
4. Do not hesitate to ask questions.

4.3 Performance Evaluation

**The University of Iowa
Department of Physics and Astronomy
TA Performance Evaluation**

Employee: _____

Date of Review _____

Assignment: _____

Courses: _____

1. The TA has effective teaching skills. (check one)
Standards-The TA is able to communicate effectively and the students understand the physics concepts taught by the TA
Strongly agree:
Agree:
Disagree:
Strongly disagree:
No opinion:

Comments:

2. The TA is adequately prepared to teach lab sections. (check one)
Standards-The TA understands the material and is able to explain it. TA does the experiments in advance and prepares an explanation of the important parts.
Strongly agree:
Agree:
Disagree:
Strongly disagree:
No opinion:

Comments:

3. The TA has familiarity with laboratory facilities and equipment. (check one)
Standards-TA maintains laboratory equipment and informs the lab coordinator when equipment is broken and alerts the appropriate person about damaged or misplaced laboratory facilities.
Strongly agree:
Agree:
Disagree:
Strongly disagree:
No opinion:

Comments:

4. The TA attends all training sessions (spring, fall, weekly).
Standards-A 30-minute training session is mandatory for all lab TAs on Fridays before the week that they have labs. TA training also occurs at the beginning of fall and spring semester.
Strongly agree:
Agree:
Disagree:
Strongly disagree:
No opinion:

Comments:

5. The TA conducts him/herself in a professional manner that is consistent with the University of Iowa Policy on Sexual Harassment and Consensual Relationships and the UI Policy on Human Rights. (check one)
Standards-see University of Iowa policy
Strongly agree:
Agree:
Disagree:
Strongly disagree:
No opinion:

Comments:

6. The TA is reliable. (check one)
Standards- The TA reports to lab/class/tutorial room on time, maintains office hours, returns graded assignments promptly (lab reports, etc.), and assumes responsibility for coverage in the event of absence.
Strongly agree:
Agree:
Disagree:
Strongly disagree:
No opinion:

Comments:

7. The TA has established effective working relationships with course instructor. (check one)
Standards-The TA has the course syllabus, knows what course material has been covered in lecture, and follows the professor's instructions.
Strongly agree:
Agree:
Disagree:
Strongly disagree:
No opinion:

Comments:

Administrative Associate comments: Name: _____ Date _____

Lab Coordinator comments: Name: _____ Date _____

Faculty/instructor comments: Name: _____ Date _____

TA comments:
Name: _____ Date _____

TA signature: _____ Date: _____

Supervisor's signature: _____ Date: _____

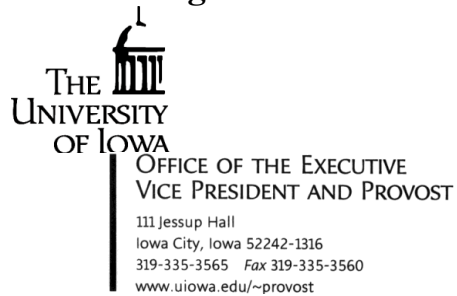
4.4 Checklist of Techniques

CHECKLIST OF CLASSROOM TECHNIQUES*

1. General Classroom Environment
 - (a) Make sure the room is well lit.
 - (b) Shut the door if the hallway is noisy.
2. Speech
 - (a) Look at the students when you talk to them, not at the blackboard.
 - (b) Speak clearly and with sufficient volume.
 - (c) Speak more slowly than you think you need to.
 - (d) Don't be afraid to stop and think.
 - (e) Try to avoid phrases like "you know" and "like".
 - (f) Show enthusiasm and interest in the material.
3. The Blackboard
 - (a) Erase the blackboard completely before starting.
 - (b) Make sure your writing is large enough for everyone to see.
 - (c) Write legibly, even if it takes longer.
 - (d) Draw all diagrams clearly.
 - (e) Do not stand in front of your writing; make sure that all students can see what you have written.
 - (f) Never make partial erasures to manipulate equations.
 - (g) Allow students time to copy what you have written.
 - (h) Make sure that the symbols that you use are consistent with the text.
4. Content
 - (a) Present solutions to problems in an organized and coherent manner. However, first start with STEP 0 – how you figured out what kind of problem it is.
 - (b) Give references in the book for specific techniques.
 - (c) Do not quote the book verbatim. Students like to hear DIFFERENT approaches to the same problem.
 - (d) Try to give insights to different problem solving techniques.
 - (e) Clearly explain all steps in the solution.
5. Student Interaction
 - (a) Ask the class questions. Allow sufficient time for answers. (Try counting to yourself slowly to 10.) Reduce the risk by asking the students what they GUESS the answer is.
 - (b) Never ridicule a student for giving a wrong answer; be supportive!
 - (c) Praise students for correct answers or correct parts of answers. Express confidence in the students' ability to learn.
 - (d) Be careful in your use of language. Avoid phrases that are profane, vulgar or suggestive. Remember that your behavior and language sets the tone for the class and reflects on the field as a whole.
 - (e) Treat students with respect and caring, and promote students' interest.
 - (f) Do not try to show off how smart you are in class.

*From Notes and Suggestions for Teaching Assistants, by A. Bodek and P. Auchincloss, UR-1348 (August 1995.)

4.5 Assisting Student with Disabilities



July 2009

To: Faculty members
From: Susan Johnson, Associate Provost for Faculty
Marcella David, Special Assistant to the President for Equal Opportunity and Diversity
Associate Provost for Diversity

Re: Academic accommodations for students with disabilities

Our strategic plan, *The Iowa Promise*, recognizes the link between diversity and educational excellence. In our efforts to become one of the nation's premier public institutions, we have identified the recruitment of diverse faculty, staff and students and providing a supportive environment for success as key strategies. Disability is an important dimension of diversity, and our goal is to be welcoming and supportive for members of our community who are differently abled.

In addition, as an educational institution, The University of Iowa has legal responsibilities. The University is required by law to provide access to all of its programs and activities to UI students with disabilities and is prohibited from discriminating against these students on the basis of their disability. Section 504 of the Rehabilitation Act is the specific requirement for faculty to provide reasonable academic accommodations for students with documented disabilities and the Americans with Disabilities Act requires making public accommodations available for persons with disabilities. The UI accepts only those students who are qualified for admission and participation in its programs; however, at times an accommodation is necessary to ensure equitable access. We are writing to thank those of you who have provided—or will provide—academic accommodations to students with disabilities and helping the University fulfill its commitment to ensuring equal access.

As the University unit designated to work with students with disabilities, Student Disability Services (SDS) reviews documentation to determine if a student has a qualifying disability and identifies reasonable accommodations based on functional limitations. Through academic and other accommodations, SDS helps level the academic playing field for qualified students with disabilities. SDS shares the faculty's commitment to maintaining academic standards for all students, with and without disabilities, from admissions through graduation. The office does not endorse giving students with disabilities a competitive advantage.

At the beginning of each term, SDS advisors meet individually with students to review course syllabi and identify what, *if any*, accommodations are required. Each of the student's instructors is notified of classroom accommodations and/or exam accommodations through the Student Academic Accommodation Request (SAAR) form. **SDS advisors need to hear from you if you have any questions or concerns about necessary accommodations listed on the form (335-1462).** You also may seek the assistance of your collegiate dean's office in implementing student accommodations.

If a student approaches you about disability accommodations without a SAAR form, it is important for you to refer that student to SDS before providing accommodations. In this way, we can all remain assured students with disabilities receive the accommodations to which they are entitled and University standards are maintained.

A question and answer sheet entitled [Assisting Students with Disabilities: A Guide for Instructors](#)

is intended to answer common questions about providing accommodations to students. Should you have additional questions or need assistance about working with students with disabilities, please contact Student Disability Services at 335-1462. You may refer to the Student Disability Services website at <http://www.uiowa.edu/~sds/faculty/index.html>.

Thank you for making The University of Iowa accessible for students with disabilities. Please feel free to contact us or the Office of Equal Opportunity and Diversity (319-335-0705 or diversity@uiowa.edu) with questions.

c: Wallace D. Loh, Executive Vice President and Provost
Tom Rocklin, Vice President for Student Services and Dean of Students

4.6 CLAS Classroom Procedures

CLASS LISTS:

At the beginning of each semester, you need to go to the professor of the class you are teaching lab for and get lab class lists for your use. You will need to check with your professor on any you receive after the first one to see if they need it returned to them or if it is yours to keep. Different professors handle these differently. If they need it returned to them, you should make a copy for yourself.

You should take roll frequently the first couple of weeks of class.

If you have a student in your class who is not on your list find out why. If they are making up a lab, they should have followed the procedures for doing a makeup lab outlined below. If they say they are supposed to be in your lab, find out if they added it or if they are actually supposed to be in a different section that meets at the same time in a different room. Check with the list in room 203, if they have added they will be on it. If they are supposed to be in a different section, have them attend the one they are registered for. If they are in yours because they want to add or switch to your section, they need to come to room 203 and do a section change. (See *DROP/ADD SLIPS*.) If your section is full according to our records, we will put them on a waiting list and try to get them in. It is **not** your decision to let a student into your lab without checking with the General Office. We may have a waiting list for your section; these people would have priority.

If you have a student that keeps showing up on your class list that is not attending lab you should try the following: check in 203 to see if they have dropped or switched sections or check with other TA's of the same course to see if they are attending the wrong section. **Physics TA's only** - Check with the professor of the course to see if they have been excused from taking the lab due to a 2nd grade option, or check in 203 to see if they have a lab card from a previous semester. If there is a lab card on file for them but they have not contacted the professor to be excused, the student will need to be contacted. Being excused from the lab portion of the course is not automatic when doing a 2nd grade option.

DROP/ADD SLIPS:

Drop/add slips are to be signed in the general office, room 203 VAN, **only**. If a student comes to you for a signature on a drop/add slip send them to room 203 VAN. We sometimes have waiting lists for several sections and we keep track of the number of students enrolled in each lab section. Let us know if you feel that you have room in a lab that we show as being full and a student wants to add your section. We will consider the situation and may sign their add slip if there is not a waiting list.

OFFICE HOURS:

You should post your office hours outside of your office and provide this information to the general office and course instructor.

ABSENT OR LATE:

Call the general office at 335-1686 if you are going to be absent or late for your lab or tutorial hours.

MAKEUP LABS:

Students are not allowed to attend sections they are not registered for (makeup labs) except under the following conditions.

4. The student must have permission from the professor, both TAs involved, and, for physics labs, the laboratory coordinator. Permission must be requested at least one week in advance except in the case of an emergency.
5. No student can go into a section that is already full.

6. No more than one "visiting" student in any lab section at a time.

Permission is not automatic and may be denied due to lack of equipment, experiments requiring close TA scrutiny, or other circumstances.

As stated in the University's Course Exam Schedule Conflict Policies: "When there is a conflict between an exam scheduled outside of class time and a regularly scheduled course, the regularly scheduled course will take precedence." It is up to the instructor of an exam scheduled outside regular class hours to arrange a makeup exam for the students who have a schedule conflict.

LAB CARDS:

Lab cards are filled out by TA's for all students in a *physics* labs each semester. You may obtain these cards in 203 VAN. *Within two weeks after the last week of classes, you need to turn in your completed lab cards to 203 VAN to be filed.* Please make sure the entire card is filled out legibly, especially the student's name, filing and retrieving cards is very difficult if we cannot read the name. *Do NOT have the students fill out ANY part of the card, this will result in the cards being returned to you to redo.* Please fill out lab cards in ballpoint ink or via your computer. Pencil and felt tip sometimes smear and become unreadable. If a person only does some of the labs and then drops, quits coming, or whatever you do still need to turn a lab card in for them. You do not need to turn in a card for someone assigned to your section who has previously taken the entire lab and been excused from repeating it. Make sure your cards are in alphabetical order when you turn them in.

Students sometimes take courses second grade option. When they do this, they do not always have to retake the lab if they did satisfactorily the first time. It is up to the professor of the course, unless they have passed this responsibility to the TA's, to determine whether the student will need to retake the lab in part or in full. If you have one of these students in your lab, you or the professor needs to come to room 203 VAN and get their old lab card. (The student should inform you of this near the beginning of the semester, or you may want to check to see if this is the case if you have a student who never comes to lab yet remains on your class list.) You should check their card early in the semester. This gives us time to track down their previous TA if we cannot find a lab card. This also gives them an opportunity to find out if they need to redo any of the labs. Make a copy of the card and return the original to room 203. Turn these grades in to the professor at the end of the semester. You do not need to fill out a new lab card for these people unless they redo labs or complete ones they previously missed. Please inform the general office if you have any students enrolled in your sections who have been excused from the lab. This is especially important if we have a waiting list for that particular section.

TUTORIAL ROOM EXPECTATIONS:

The Physics Tutorial Room is located in room 54 Van Allen Hall and the Astronomy Tutorial Room is located in room 665 Van Allen Hall.

TA's who are assigned to the tutorial room are expected to help students who are having problems with homework assignments and help students prepare for exams. Students who typically use the physics tutorial room are those enrolled in 29:008, 29:011, 29:012, 29:017, 29:018, 29:027, 29:028, 29:029, 29:030. Students who typically use the astronomy tutorial room are those enrolled in 29:050, 29:052, 29:061, 29:062.

How to help students:

- Be friendly and helpful to students.

- Help students develop steps to solve homework problems. **Tutorial Room TA's are not expected to nor should they solve homework problems for students.**

- Work with the students on their level - talk in a manner that is easily understood by students.

- Familiarize yourself with the textbooks of these courses. To review these books please see Debbie Foreman in 202 Van Allen.

You are expected to be available during your scheduled tutorial room hours. If you are unable to attend, it is your responsibility to find a substitute. If an emergency arises that requires your absence, please contact Aaron

Votroubek (335-0134 or aaron-votroubek@uiowa.edu) or Heather Mineart (335-1688 or heather-mineart@uiowa.edu). Failure to cover your hours can result in disciplinary actions.

GRADERS:

You are assigned a specific amount of grading hours per week for an individual class. This is the average number of hours per week that you are expected to work for this class; the load will very likely vary from week to week. Either in the week before class or early in the first week of class, you will need to meet with the faculty member in charge of that course to determine how the grading for the class will occur. You may be asked to provide solutions for the problems to be graded or these solutions may be provided to you depending on the individual faculty member. The faculty member will give you specific expectations related to:

- a. which problems to grade and the date that they are due back to faculty member;
- b. how grades are to be recorded and when these should be provided to the faculty member (you are responsible for recording the grades of the homework that you grade);
- c. if you are providing solutions, when solutions need to be made available to the class via web page, library notebook, and/or posting and by what date the solutions are to be made available.

This assignment will vary to meet the specific faculty member's needs for the class. It is your responsibility to work with faculty member to insure that grading is completed in a timely manner. If the average amount of time you spend on grading responsibilities exceeds the amount assigned, you should inform the faculty member to find a way to accomplish the grading in the assigned amount of time. As with any work situation, you are required to perform you assigned grading tasks regardless of other commitments such as course work or personal time. If an emergency arises that requires your absence, please contact the faculty member in charge of the class and Aaron Votroubek (335-0134 or aaron-votroubek@uiowa.edu) or Heather Mineart (335-1688 or heather-mineart@uiowa.edu) as soon as possible.

4.7 Injuries/Liabilities in the Lab

Injuries in School/College Laboratories in USA
Injuries in School/College Laboratories in USA
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Introduction

The injury of a pupil in a school laboratory, or the injury of a student in a college laboratory, may be a tort for which the teacher, professor, school, or college is liable.

There are four elements to a tort, *all* of which must be present before the court can order a remedy:

1. **Duty.** The defendant must owe a legal duty to the victim. A duty is a legally enforceable obligation to conform to a particular standard of conduct. In personal injury cases, the duty is set by what a "reasonable man of ordinary prudence" would have done.
<http://www.rbs2.com/labinj.htm> (1 of 18)5/22/2007 3:03:32 PM Injuries in School/College Laboratories in USA
2. **Breach of the duty.** The defendant failed to conform to the legal duty. The breach can be either an act or a failure to act.
3. **Causation.** The breach was the cause of an injury to the victim. The causation does *not* need to be direct: defendant's act (or failure to act) could begin a continuous sequence of events that ended in plaintiff's injury, a so-called "proximate cause".
4. **Injury.** There must be an injury. In most cases, there must be a physical or financial injury to the victim.

Most personal injury torts involve either automobile accidents, dog bites, slip and falls, defective products, or medical malpractice. While the basic principles of tort law apply when a pupil or student is injured in a science laboratory at a school or college, this essay discusses some additional issues beyond what is in a typical personal injury case.

In 1997, when I was in law school, I did a comprehensive nationwide search of reported court cases on injuries in school and college laboratories. I was surprised to find few reported cases, and no law review articles on this subject of injuries in laboratories. As in other areas of tort law, most of the cases are probably settled before trial, so there is

no reported opinion of a court. In November 1999, I began writing this essay to share the general principles of law with teachers, professors, and attorneys.

This essay is intended only to present general information about an interesting topic in law and is *not* legal advice for your specific problem. See my [disclaimer](#).

In this essay, I use the words *pupil* and *teacher* to refer to people in elementary schools and high schools, and the words *student* and *professor* to refer to people in colleges and universities. This distinction is important, because pupils – as children – require more supervision than students, who are adults.

I list the cases in chronological order in the citations in this essay, so the reader can easily follow the historical development of a national phenomenon. If I were writing a legal brief, I would use the conventional citation order given in the *Bluebook*.

Negligence

Issues of negligence include:

- instructions that do not clearly warn of hazards (or were such hazards "obvious"?)
- instructor not present in the laboratory room at the time of the injury
- instructor preoccupied at the time of the injury (e.g., teaching assistant was doing his/her own homework and ignoring the students; instructor was grading papers)
- lack of safety equipment (e.g., goggles or face shield to prevent eye injury, ground-fault interrupters in ac electrical circuits, fume hoods when working with toxic vapors, guards around moving parts to prevent injury to fingers, etc.)
- assigned experiment was *unnecessarily* dangerous: the same educational objectives could be obtained with a less hazardous experiment, less toxic materials, etc. This is a risk/benefit analysis.
- teacher might be *incompetent* to supervise a chemistry or physics laboratory in elementary school or high school. Such a teacher might have minored in history, literature, mathematics, or physical education when he/she was a student. It might be negligent for the school to assign such a teacher to supervise pupils who are doing experiments, since the teacher would be incapable of recognizing a dangerous condition even if he/she saw it. I envision a tort along the lines of negligent entrustment by the principal of the school.

OSHA rules

It is common in personal injury cases to look at statutes or governmental regulations to determine the standard of care that the defendant should have used. In the USA, the Occupational Safety and Health Administration (OSHA) sets standards for use of hazardous materials and equipment.

The OSHA statute applies to any "employer" who is engaged in a business affecting commerce, except employees of either the federal or state government, or political subdivision of a state. 29 USC §652(5). Don't let "business affecting commerce" fool you: educational institutions can be a business under the broad powers of the commerce clause of the U.S. Constitution. The OSHA statute applies to nonprofit organizations, including private educational institutions. 29 CFR Ch. 17, §1975.4(b)(4). The University of Pittsburgh, despite being funded by the State of Pennsylvania and despite the fact that 1/3 of the trustees of the University were appointed by state officials, is *not* a political subdivision of a state, and must obey OSHA regulations. 1980 OSH Dec.(CCH) ¶24240. Public high schools (i.e., operated by the state or a political subdivision of a state) and universities totally controlled by state or federal government are probably exempt from OSHA regulations.

But, even if a school or university is exempt from OSHA regulations, the OSHA regulations could still be cited as evidence of a relevant standard of conduct in a tort case against a school or university. Furthermore, in the case of students majoring in science, engineering, or medicine, nearly all of these students will work in an OSHA-regulated environment after graduation, so it is arguably part of their education to teach them OSHA-approved safety practices.

other sources of standards for duty of care

Journals for teachers/professors in various areas of science or engineering sometimes contain discussions of safety in student laboratories. Such articles on safety could also be used as a basis for the opinion of an expert witness on the proper standard of care for the defendant.

Further, standards imposed by accrediting bodies may be relevant in developing a standard of care for colleges and universities. For example, the Accreditation Board for Engineering and Technology (ABET) accredits undergraduate programs in engineering. ABET specifically reviews and evaluates each department, unlike the general accreditation of an entire college by a regional accrediting organization.

sloppy safety

My experience, both as a full-time physics student for ten years and as a professor of electrical engineering for another ten years, is that universities are remarkably sloppy about safety considerations in their laboratories. This sloppy attitude comes from several sources:

- the macho image of a male scientist or engineer who heroically ignores danger
- the safety equipment is an *inconvenience* that is not essential to the experiment
- the school's and university's lack of money for purchase of safety equipment
- when safety equipment is purchased, it tends to disappear (probably due to petty theft), so safety equipment needs to be continually replaced. Alternatively, students majoring in physics, chemistry, biology, engineering, or medicine could be required to purchase their own safety equipment and bring it with them to the laboratory as a condition of entry.

teacher's/professor's duty to supervise

As general rules, one can say:

1. **younger people need more supervision than older people.** For example, fourth-grade pupils doing chemistry experiments should be closely supervised. On the other hand, a laboratory for engineering majors in their final year of undergraduate college might have little supervision, just a faculty member who is readily available for questions.

2. **more supervision is needed when materials or equipment are more dangerous.** For example, a chemistry laboratory (i.e., where there are flammable, explosive, or poisonous materials) needs more supervision than an electronics laboratory, where the highest available voltage is only 30 volts.

One of the best reviews of a teacher's duty to supervise pupils is in a dissenting opinion of an Arizona Supreme Court case.

The relationship of a public school teacher to his pupil is in some respects *in loco parentis*. Having the right to control and supervise the pupil, there is a correlative duty to act as a reasonable and prudent parent would in like circumstances. Proehl, *Liability of Teachers*, 12 *Vanderbilt L.Rev.* 723, 740 (1959). The rationale of *in loco parentis* does not however apply in determining liability for a negligent tort against the pupil. In most jurisdictions the parent is not liable for negligent tort against his child, but the public school teacher may be.

The problem lies in determining what criteria should be used to meet the standard of care necessary to be exercised by the public school teacher. If the probability of harm can be foreseen, the public school teacher should take such measures as are reasonable and prudent to prevent an injury to the student. As the gravity of the possible harm increases due to conditions or circumstances to which the student is subjected, the apparent likelihood of its occurrence need be correspondingly less. No one can deny that few sectors of public and private existence are safe from risks to life and limb; the schoolyard, the classroom, the shop class, the chemistry laboratory certainly have their dangers and their risks. Teachers presumptively endowed with superior skill, judgment, intelligence and foresight, must fulfill the strong duties arising from their public position by exercising care commensurate with the immaturity of their charges and the importance of their trust. [citation omitted]

The characteristics of children are proper matters for consideration in determining what is ordinary care with respect to them, and there may be a duty to take precautions with respect to those of tender years which would not be necessary in the case of adults.

Shannon v. Butler Homes, Inc., 428 P.2d 990, 995 (Ariz. 1967).

However, age of the injured plaintiff is not the controlling element to tip the balance between liability and non-liability.

Moriss v. Ortiz, 437 P.2d 652, 657-658 (Ariz. 1968)(Lockwood, J., dissenting).

The failure of a teacher to supervise pupils can be negligent conduct by the teacher. *Dailey v. Los Angeles School Dist.*, 470 P.2d 360, 364-365 (Calif. 1970). More recently, a court held:

The university is not an insurer of the safety of its students nor a policeman of student morality, nonetheless, it has a duty to regulate and supervise foreseeable dangerous activities occurring on its property.

Furek v. Univ. of Delaware, 594 A.2d 506, 522 (Del. 1991) (University administration knew hazing was occurring at a fraternity, therefore university had liability for injury during hazing.)

Consider some reported court opinions that illustrate these principles.

cases with pupils

A 16 year old boy was assigned to make gunpowder in a high school chemistry laboratory. He erroneously substituted potassium chlorate for the potassium nitrate listed in the recipe. Instead of pulverizing the ingredients on separate sheets of paper as listed in the instructions, he poured all three ingredients into an iron mortar and pulverized them simultaneously with a pestle, which produced an explosion. The explosion blew away his left hand, seriously injured his right hand, completely destroyed his right eye (he subsequently wears a glass eye), and seriously injured his left eye, so that he has difficulty reading. The teacher was not only present in the laboratory, but also stood 15 feet behind the plaintiff. The trial court granted defendant's motion for a nonsuit. The appellate court and California Supreme Court, reversed, holding that there was sufficient evidence to find the teacher liable for negligence. *Mastrangelo v. West Side Union High School*, 29 P.2d 885 (Calif.App. 1934), *adopted by*, 42 P.2d 634 (Calif. 1935). The California Supreme Court added:

It may well be doubted whether it is proper in an introductory school course in chemistry to require pupils to make and ignite an explosive. It would appear that the dangers of such an experiment, incorrectly performed by young children, might be anticipated; and that the benefits to be derived from its actual performance by each pupil are not so great as to justify the risk of serious injury to the child. But at the very least, if it is to be performed, it necessarily requires the strictest personal attention and supervision of the instructor.

Mastrangelo v. West Side Union High School, 42 P.2d 634, 638 (Calif. 1935).

A Louisiana case in 1974 involved a group of eighth-grade pupils who were preparing a science fair project. A boy poured alcohol from a jug and a girl lit a match near the mouth of the jug, which exploded, severely burning a 14 year old girl who was standing nearby. The trial court found the teacher was negligent and awarded plaintiff \$ 7890, which was affirmed by an appellate court. The appellate court declared:

Pleas of contributory negligence and assumption of the risk by the defendant were overruled, the [trial] court finding that Miss Station [the plaintiff] did not appreciate the danger or take part in the abortive attempt to relight the burner. We affirm the judgment of that court.

The jurisprudence of this state is firmly established that where one creates, deals in, handles or distributes an inherently dangerous object or substance, that an extraordinary degree of care is required of those responsible.

This duty is particularly heavy where children are exposed to a dangerous condition which they may not appreciate.

Here, a dangerous instrument was placed in the hands of children without any special degree of care, supervision, or direction. Alcohol, a highly flammable substance, was left in their control to be used in connection with a faulty alcohol burner which had continually given trouble. That the situation was fraught with danger is proven by the results.

Station v. Travelers Insurance Co., 292 So.2d 289, 291-292 (La.App. 1974)[citations omitted].

In another case, a 14 year old boy poured alcohol from a can into an experimental determination of the boiling point of solutions of either sugar or salt in water. (The court's opinion is not clear about the facts, but the aqueous solution may have been in a beaker above a flame from an alcohol burner.) The addition of alcohol to the aqueous solution was *not* part of the assigned experiment, but was a spontaneous idea of the victim. The teacher was in an adjoining room at the time of the accident. The trial court granted the school's motion for summary judgment. The Wyoming Supreme Court reversed, holding that the alleged negligence of the teacher was a question of fact that needed to be determined by a jury. The Wyoming Supreme Court's opinion says:

Absent special dangerous circumstances, a school district does not have the duty of providing constant supervision of all movements of all pupils at all times.

Connett v. Fremont County Sch. Dist., 581 P.2d 1097, 1103 (Wyo., 1978).

... we would observe that the school owes the student the duty to supervise his activities. This duty becomes more imperative in the classroom, and risks of danger are foreseeable, and thus the degree of care higher, where young, inexperienced students are handling substances which for them are potentially dangerous.

Id. at 1104.

Note that while the judge used the words pupil and student interchangeably, the judge should have consistently used pupil to describe the plaintiff, who was enrolled in a middle school.

cases with undergraduate students

An 18 year old college freshman was taking the second semester of an introductory chemistry class when she mixed potassium chlorate, ferric oxide, and red phosphorous, then applied heat. The mixture exploded and she was injured. The previous experiment in the instruction manual, which she had read and performed, warned not to mix potassium chlorate and combustible materials. The plaintiff and two other students were working in one group, alone in the laboratory. Their instructor was across the hall, meeting with a student. The jury found that plaintiff's injury was proximately caused by failure of the instructor to supervise the experiment and the appellate court affirmed.

Brigham Young University v. Lillywhite, 118 F.2d 836 (10thCir. 1941). The jury's verdict troubles me, as it seems to imply that an instructor must monitor every step of every student's experiment, something that is impossible in most laboratory classes with perhaps 20 students.

A college sophomore in an organic chemistry laboratory took a flask of diethyl ether from a fume hood to her laboratory bench. She put the flask about 75 cm from a lighted bunsen burner. The ether vapor ignited and burned the student. The student sued the university, because neither the directions for that specific laboratory experiment, nor the instructor's comments on that day, contained a warning to keep ether away from flame. The jury awarded student \$ 45,000 and the appellate court upheld the award. *LaVoie v. State*, 458 N.Y.S.2d 277 (1982).

cases with graduate students

In contrast to the above cases involving injury to a pupil or undergraduate student, consider the following cases involving injury of a graduate student. A student pursuing a Ph.D. degree in biology was burned when he was synthesizing monoacetone glucose in a laboratory at Johns Hopkins University. The student chose, as a matter of his personal convenience, to perform the experiment in his usual laboratory that lacked safety equipment, instead of going to a safer laboratory at the University. The student sued the University. The trial court granted the University's motion for summary judgment, holding, as a matter of law, that the student had assumed the risk of an accident. The appellate court affirmed. *Evans v. Johns Hopkins Univ.*, 167 A.2d 591 (Md.App. 1961).

A student pursuing a Ph.D. degree in physics was injured in an explosion in a laboratory. He sued, alleging that his professor and the university should have warned him about the danger of mixing acetone, ethanol, and nitric acid inside a metal container. The trial court directed a verdict for defendants, which was affirmed on appeal. The appellate court said:

Neither [the college] nor [the professor] was required to warn [the student] of the dangers of mixing these chemicals.

....

Although a university student is an invitee to whom the university owes a duty of reasonable care, college administrators do not stand in loco parentis to adult college students. [The professor] has the right to assume that a physics doctoral student, who has graduated with highest honors in chemistry, would either know the dangers of mixing these chemicals or would perform the research necessary to determine these dangers and take the necessary precautions.

Niles v. Board of Regents, 473 S.E.2d 173, 175 (Ga.App. 1996)

... Niles is deemed, as a matter of law, to have equal knowledge [to the professor] of the dangers of mixing these chemicals.

Id. at 176.

These cases show that it is difficult for graduate students to recover for injuries suffered in a university laboratory, as a result of their mistake, error, or bad judgment.

There is a recent case in Connecticut in which an anonymous plaintiff, Doe, who was in his sixth week of residency at Yale-New Haven Hospital, was ordered to change an arterial line in a terminally ill AIDS patient. Doe alleged that he had never been trained to do this procedure safely, and he was unsupervised when he did it. Doe accidentally stuck himself with the used needle and became infected with HIV. Doe sued Yale. Yale argued unsuccessfully that Doe was alleging educational malpractice, so Yale's motion for summary judgment was denied.

Doe v. Yale University, 1997 WL 766845 (Conn.Super. 1997).

(Nearly all reported cases of laboratory injuries involve explosions or fires in chemistry laboratories. *Doe* is the only biology or medical case of which I am aware.)

unauthorized experiments by pupils

Looking beyond the narrow scope of instructions in a laboratory class, pupils and students often deviate from assigned laboratory experiments which raises legal issues of assumption of risk, contributory negligence, comparative negligence, or even consent. For example, pupils and students sometimes use chemicals to build explosives, rocket fuel, or incendiary devices.

Several courts have considered pupil's surreptitious deviations from assignments as contributory negligence by pupils, which barred any recovery in tort by the pupil, despite the pupil's young age.

1. A 15½ year old boy was granted access to the school chemistry laboratory for the specific purpose of assembling apparatus for an experiment to be conducted during chemistry class, later that day. While there, he made an explosive compound according to his own recipe (i.e., *not* in the school's laboratory manual). The explosion blinded his left eye, mangled his left hand so that it required amputation, and perforated his stomach with glass. The trial court directed a verdict for defendant, owing to the contributory negligence of plaintiff in doing an *unauthorized* experiment. *Moore v. Order Minor Conventuals*, 164 F.Supp. 711 (W.D.N.C. 1958), *aff'd*, 267 F.2d 296 (4thCir. 1959).

It may seem harsh to hold that a 15 year old boy is totally responsible for his injuries. The judge may have relied on the facts that the boy had been familiar with firearms for nine years, and his fellow students in the laboratory advised him not to mix those chemicals.

2. A 13 year old boy was assigned to build a record player in the school laboratory. Instead, he mixed chemicals for rocket fuel, which exploded and burned him. Although the trial court awarded damages to the boy, the appellate court reversed, by holding that the boy was contributorily negligent. *Wilhelm v. Board of Education*, 227 N.Y.S.2d 791, *aff'd without opinion*, 189 N.E.2d 503 (N.Y. 1963).

3. A 15 year old boy stole crystalline potassium chlorate from a high school chemistry storage room. The chemical was used to make propellant for a cannon, which exploded and "severely injured" the hands of the 15 year old plaintiff. The trial court granted defendant's motion for nonsuit at the conclusion of plaintiff's case. The appellate court affirmed, holding that plaintiff had been contributorily negligent as a matter of law. *Hutchison v. Toews*, 476 P.2d 811 (Or.App. 1970).

4. A 17 year old high school senior, and student assistant to the chemistry teacher, mixed red phosphorus and potassium chlorate in a glass test tube with a metal spatula. He mixed "somewhere between 65 and 100 times the volume prescribed in the manual it exploded, causing plaintiff serious injury." A jury returned a verdict in favor of the teacher and school. The reported opinion of the appellate court is concerned with a motion for a new trial, which it denied. *Shifton v. North Clackamas Sch. Dist.*, 523 P.2d 1296, 1298 (Or.App. 1974).

5. A teenaged boy stole sodium chlorate from a school laboratory, by secreting it in his pants pocket. That night, at home, the chemical ignited and burned his leg. Although the trial court denied the school's motion for summary judgment, the appellate court reversed, by holding that the intentional theft was a superseding force that absolved the school from liability. *Brazell v. Board of Education*, 557 N.Y.S.2d 645 (1990).

pupils may *not* be contributorily negligent

I would caution against teachers and professors relying on cases that hold young pupils are contributorily negligent. Attorney for the plaintiff could easily argue that teachers should have foreseen such misuse of laboratory equipment by pupils, who were too young to understand fully the magnitude of the danger involved. Anyone who works in education knows that pupils and students – even those who are "old enough to know better" – sometimes do stupid or immature things, because of their lack of experience and because of their lack of perception of the magnitude of the danger. See, e.g., *Kush v. City of Buffalo*, 449 N.E.2d 725, 729 (N.Y. 1983) (Not locking chemical storeroom at high school was negligent, when storeroom contained "dangerous chemicals", such as magnesium powder and potassium nitrate.).

The dean of the Marquette University School of Law and a former administrator in the Omaha, Nebraska public schools commented:

The problem is that the court may often conclude that although pupils recognize that a warning of danger has been given, they do not fully comprehend the extent of the danger. The court is likely to see in the failure to properly supervise the creating of an improper atmosphere of temptation to experiment.

Reynolds C. Seitz, "Legal Responsibility Under Tort Law of School Personnel and School Districts as Regards Negligent Conduct Towards Pupils", 15 *Hastings Law Journal* 495, 504 (1964).

Seitz cites a 1943 opinion in California that says:

Knowledge that danger exists is not knowledge of the amount of danger necessary to charge a person with negligence in assuming the risk caused by such danger.

Ridge v. Boulder Creek Union ..., 140 P.2d 990, 993-994 (Cal.App. 1943).

The two dissenting judges in a famous New York state case noted:

When a large number of children are gathered together in a single classroom, without any effective control or supervision, it may reasonably be anticipated that certain of them may so act as to inflict an unintentional injury upon themselves or their classmates. Children have a known proclivity to act impulsively without thought of the possibilities of danger. It is precisely this lack of mature judgment which makes supervision so vital.

Ohman v. Board of Education of City of New York, 90 N.E.2d 474, 478 (N.Y. 1949)(Conway, J., dissenting, with whom Chief Judge Loughran concurred.)

In the same dissent, Judge Conway wrote a telling retort to the majority's holding that the teacher's 75 minute absence from the classroom was not the proximate cause of a pupil's injury.

Parents do not send their children to school to be returned to them maimed because of the absence of proper supervision or the abandonment of supervision.

Id. at 476.

While this dissent is *not* law in New York State, two courts in Maryland have quoted the remark about parents not sending their children to school to be maimed:

Segerman v. Jones, 259 A.2d 794, 801 (Md.App. 1969).

Berg v. Merricks, 318 A.2d 220, 227 (Md.App. 1974).

Also, a trial court judge in New York State agreed with Judge Conway's dissent:

Feuerstein v. Board of Ed. of City of N.Y., 202 N.Y.S.2d 524, 528 (1960), *aff'd without opinion*, 214 N.Y.S.2d 654 (1961).

From an authoritarian point of view pupils, perhaps students also, should be required to obtain advance permission from a teacher or professor for any significant deviations from the laboratory instructions or for any experimental initiatives that the pupil or student may devise. This authoritarian point of view, in my opinion, is ill-suited for an educational environment. Further, most teachers in elementary school and many teachers in high school lack the detailed knowledge of chemistry that would allow them to predict the consequences of a chemical reaction. Rigidly prohibiting (or even discouraging) any deviations by students would inhibit their creativity and learning. Thus, balancing of competing concerns is more appropriate than rigid rules.

academic abstention

The readiness of judges to hold children contributorily negligent, and thus teachers *not* liable for their pupils' injuries, **may** be another expression of academic abstention, a poorly articulated doctrine in which judges give great deference to:

1. administrators who make hiring decisions about teachers or professors
2. administrators who expel students for failure to maintain academic standards
3. teachers or professors who award a bad grade to their pupil or student
4. and administrators who expel pupils or students for disciplinary reasons, provided that the First Amendment or "due process" rights of the student have not been violated.

I discuss [academic abstention](#) in my essay on academic freedom for professors. There are not enough reported cases on laboratory injuries to pupils and students to fully understand how academic abstention impacts torts for physical injuries in schools and colleges. My feeling from reading cases is that judges are much more willing to find for plaintiffs in cases involving personal injury in schools and colleges than in cases that involve the issues in the above indented list. I believe it would be foolish for a teacher or professor to rely on winning a summary judgment motion in a matter of physical injury to a pupil or student. Ordinarily, it is a question for the jury to determine whether the plaintiff has been contributorily negligent.

Hazards Inherent in Science ?

The defendant may claim that use of hazardous materials and equipment is inherent in some laboratory procedures, for example:

- use of scalpel and other sharp instruments during dissection in biology lab
- bites by animals (e.g., rat, rabbit, monkey) in a biology or medical laboratory
- skin injury from acids or strong alkaline solutions in chemistry lab
- explosions or fires in chemistry lab
- cuts from broken glassware in chemistry lab
- electrocution in physics or electrical engineering lab
- poisonous materials in chemistry or biology lab
- infectious materials in a microbiology lab, medical school, nursing school, etc.
- radioactive materials in a physics lab
- x-ray machine in medical and dental schools
-

Obviously, some hazards are inherent in laboratory procedures, but these hazards are not an excuse for injuries. Instead, the existence of these hazards require that teachers/professors use appropriate caution when designing laboratory experiments, and when supervising pupils/students in the laboratory room. For example, a teacher/professor might be able to modify an experiment so that it is less hazardous, without impairing the educational experience for pupils/students. One may wonder if a pupil/student who is taking a required introductory biology or chemistry class in order to graduate from high school or college should be *required* to risk life and limb in a laboratory. It is one thing for professional scientists to take such risks with their own lives, it is another thing for teachers/professors to require that pupils/students take such risks, especially when the introductory science class is on the periphery of the pupil's/student's knowledge. (On the other hand, society seems to have no problem with requiring pupils and students to participate in athletic activities, which carries a greater risk of physical injury, but absolutely no intellectual benefit.)

The situation is somewhat different with a student who concentrates in some area of science or engineering, or with a student in medical school, who – as part of their education – *must* learn how to work safely with hazardous materials.

An injury to a pupil or student does *not* automatically indicate that the defendant is legally responsible for the injury. Before a plaintiff can recover damages, the plaintiff *must* demonstrate to the court that the defendant was negligent. However, the level of proof is only preponderance of evidence, i.e., at least 51% probability.

I was a full-time physics student in universities for ten years (1967-77) and a professor of electrical engineering for another ten years. I worked with 120 V ac electrical circuits since I was a high school student in 1965 who was doing theater lighting. I did high-voltage laboratory experiments during 1971-90, working at voltages up to 40 kV. In all of these years of work, I have only been shocked twice: once in high school and once during my first year of graduate school. It *is* possible to work safely with hazardous materials.

Immunity ?

sovereign immunity

The conventional wisdom is that the ancient doctrine of *sovereign immunity*, which holds that people can not sue the federal or state government, was imported from England (i.e., "The King can do no wrong."). Scholarly reviews show that courts in the USA during the 1800s gave sovereign immunity a much greater force than it held in England. Further, the Revolutionary War (1775-1783) was fought to escape from the divine right of kings and to assert a government in which the people say what their rights are, although courts in the USA seem to have forgotten this history. See, e.g., *Molitor v. Kaneland Community Unit*, 163 N.E.2d 89 (Ill. 1959); *Muskopf v. Corning Hosp. Dist.*, 359 P.2d 457 (Calif. 1961); *Mayle v. Penn. Dept. Highways*, 388 A.2d 709 (Pa. 1978); A good general description of this doctrine is in Prosser & Keeton, *Torts*, § 131 (1984). The modern trend is to abolish sovereign immunity.

The Illinois Supreme Court in 1959, The California Supreme Court in 1961, and the Pennsylvania Supreme Court in 1978 all abolished the doctrine of sovereign immunity. The legislatures of each state reacted in terror at the possible obligation of the state to pay large money damages as a result of negligence by state employees: the legislatures quickly enacted statutory immunity for those states, thus overruling these Courts' pronouncements.

While the opinion of the Pennsylvania Supreme Court is now only of historical interest, it is remarkable for the harsh words directed at sovereign immunity. *Mayle v. Penn. Dept. Highways*, 388 A.2d 709 (Pa. 1978).

modern sovereign immunity

The federal government in the USA and most states have a statute that permits tort claims against the government, under certain conditions. The federal statute, which was first enacted in 1940, is codified at 28 USC § 2671 et seq. In Massachusetts, the relevant statute is in chapter 258, which was first enacted in 1978. The following principles are noteworthy:

1. Local governments, which operate public schools, are generally *not* sovereigns. If a judgment against a school district would be paid from state funds, then the school district may qualify for sovereign immunity. Otherwise, school districts in some states may qualify for governmental immunity, which is similar to sovereign immunity. *Ayala v. Philadelphia Board Edu.*, 305 A.2d 877 (Pa. 1973) (abolishing governmental immunity in Pennsylvania, which was then enacted by the legislature).
2. Governments can be sued under a Tort Claims Act for injury caused by negligence or intent, but *not* for exercise of discretionary power. 28 USC § 2680. In Massachusetts, the relevant statute is in chapter 258, § 10.
3. A potential plaintiff under some state Tort Claims Acts must give notice to the state within a time much shorter than the statute of limitations for torts. For example, see N.J.Stat. 59:8-8 (90 day limit); N.Y. Education Law § 3813(1)(three month limit); Mass.Stat. ch. 258 §4 (must present claim to public employer within two years of injury). These examples were correct at the end of 1998, but may change in the future.
4. Students at military academies operated by the U.S. Government probably can not sue for injuries, under the holding in *Feres v. U.S.*, 340 U.S. 135 (1950).

The subject of sovereign immunity is a complicated area of law, which not only varies among the states, but is also changing with time as states generally follow the modern trend to abolish this immunity. Therefore, it is important that you consult an attorney who is licensed to practice in your state, to learn the current law for your state.

charitable immunity

An old principle of law was that nonprofit institutions (e.g., churches, hospitals, private schools and colleges) could not be sued for torts. The reasoning in support of this principle seems to be that:

1. a public policy argument: rendering of charitable services, including occasional negligence, was better than the alternative of no services and
2. limited financial resources should be spent on rendering more charitable services, not on compensating tort victims. This reason is sometimes expressed by observing that the charitable institution held money from donors in trust. It would be a violation of that trust to divert money to compensate tort victims, a purpose not contemplated by donors to the charity. (The courts' reasoning is circular in that it *assumes* that payment of tort claims is not a proper purpose, then uses the trust theory to validate that assumption.)

Whatever the value of the doctrine of charitable immunity, it is now thoroughly obsolete, and it offers no protection to private schools/colleges or other charitable organizations. See *Bing v. Thunig*, 143 N. E.2d 3 (N.Y. 1957); *President and Directors of Georgetown College v. Hughes*, 130 F.2d 810 (D.C.Cir. 1942).

high hurdles

In reading reported cases on the topic of this essay, I have come across statutes in a few states that make it so difficult for pupils to sue teachers that the teachers effectively have immunity. As these states with harsh law are far from Massachusetts, where I practice, I have no interest in doing research to see if these harsh statutes are still the law in those states. I simply note the following recent legal barriers to holding teachers responsible for their wrongful conduct.

In Illinois, a state statute gives teachers the status of parent or guardian. A parent or guardian is not liable for injuries to a child, except for wilful and wanton misconduct of the parent/guardian. Therefore, the effect of this Illinois statute is to require plaintiff to show that a teacher behaved in a wilful and wanton way toward a pupil, before the plaintiff can get past a summary judgment motion by the teacher. See *Kobylanski v. Chicago Board of Educ.*, 347 N.E.2d 705 (Ill. 1976); *Nielsen v. Community Unit School Dist.*, 412 N.E.2d 1177, 1178 (Ill.App. 1980).

In Texas, a state statute bars torts against any teacher who acts within the scope of their official duties, except when the teacher uses excessive force when punishing a student. *Hopkins v. Spring Ind. Sch. Dist.*, 736 S.W.2d 617 (Tex. 1987); *Barr v. Bernhard*, 562 S.W.2d 844 (Tex. 1978); *Duross v. Freeman*, 831 S.W.2d 354, 356 (Tex.App. 1992) ("... it is troubling from a public policy standpoint that our corporate citizens have unfettered access to the courts for redress of perceived tortious grievances, but children, whose well-being has been entrusted to fiduciaries known as parents and teachers do not have access because of *Barr* and *Hopkins*."); *Wagner v. Alvarado Ind. Sch. Dist.*, 598 S.W.2d 51 (Tex.App. 1980).

See also Christopher Bello, "Personal Liability of Public School Teacher in Negligence Action...", 34 ALR4th 228 (1984); Reynolds C. Seitz, "Legal Responsibility Under Tort Law of School Personnel and School Districts as Regards Negligent Conduct Towards Pupils", 15 Hastings Law Journal 495 (1964).

First-Aid

The legal duty of the school or college is *not* confined to supervision by teachers and professors, in an attempt to prevent injury. The school or college also has a legal duty to anticipate that there will be accidents and to provide an adequate response, such as having functional fire extinguishers and first-aid kits.

The general rule in tort law is that bystanders have *no* duty to rescue an injured person. Restatement (Second) of Torts, § 314 (1965). However, teachers/professors have a "special relationship" with their pupils/students, such that teachers/professors have a legal duty to rescue and to render first aid. See, e.g., *Kleinknecht v. Gettysburg College*, 989 F.2d 1360 (3dCir. 1993) (Holding college owed lacrosse player duty of care based on "special relationship", since college recruited student to play lacrosse. Student, who was 21 y of age, suffered cardiac arrest during practice and died. College did not begin CPR until 12 minutes after student collapsed, ambulance arrived 22 minutes after he collapsed.); Restatement (Second) of Torts, § 314A comment *d* (1965), see also illustration 7.

A case in Washington state in 1959 clearly shows the duty of a college. Jay, a third-year chemistry student was working in one laboratory when he heard an explosion in an organic chemistry laboratory across the hall and ran to help. On entering the organic chemistry laboratory, Jay saw two students using a fire extinguisher in an attempt to put out a fire. Jay picked up an extinguisher from the hallway and reentered the organic chemistry laboratory. As Jay discovered that his extinguisher was empty, the apparatus exploded, puncturing the retina of his eye and causing permanent injury. There were five fire extinguishers in the basement of the chemistry building, none of which had been recently maintained or inspected. There was normally only one fire extinguisher in the organic chemistry laboratory room, and it had been emptied while fighting two previous fires during the same experiment with ethylene ether and other highly flammable gases. The empty extinguisher had been left in the hallway, where Jay found it. When Jay sued the college, the college's attorney argued that Jay had consented to the risk of injury when he volunteered to fight the fire! The jury awarded Jay \$ 27303 (a substantial amount in the 1950s) and the appellate court affirmed. *Jay v. Walla Walla College*, 335 P.2d 458 (Wash. 1959). The appellate court held that the frequency of fires, together with the lack of recently inspected fire extinguishers, made "a prima facie case of negligence in failing to provide adequate fire-fighting equipment." *Id.* at 460.

In a Louisiana case in 1970, a high school pupil collapsed from heat stroke while practicing for football. Because of the delay of two football coaches, the pupil was not seen by a physician for almost two hours after the pupil collapsed. The appellate court held that the two coaches were negligent in failing to call a physician and also in

using "ill-chosen first aid". The appellate court awarded the pupils parents \$ 40,000 in a wrongful death action, plus reimbursement of their son's medical and funeral expenses. *Mogabgab v. Orleans Parish Sch. Bd.*, 239 So.2d 456, 460 (La.App. 1970), writ denied, 241 So.2d 253 (La. 1970).

Workers' Compensation for Students

When a graduate student is injured in a laboratory, a college often takes the legal position that the student was an employee (e.g., teaching assistant or research assistant) and therefore only entitled to Workers' Compensation.

Whether an injured person is a student or an employee is an important legal question, because awards in Workers' Compensation cases are typically much less than in a tort case for negligence.

I believe there are good reasons why a graduate research assistant is *not* an employee of the college. The issue is not as clear for teaching assistants.

If you are an attorney with such a case, I would welcome the opportunity to write a memorandum of law on this topic.

injury of teacher or professor

I found one case in which a professor sued a college for the professor's injury in the college laboratory. Prof. Jaworowski used a 2 MeV Van de Graff generator in a particle accelerator in the physics laboratory at Wright State University. When the generator was moved to a new location in the Spring of 1985, various safety features were disabled during packing, and were *not* enabled at the destination. Jaworowski continued to use the generator at its new location, although he knew that not only were the safety features disabled, but also the radiation safety committee at the university had *not* authorized the use of the generator at its new location. Jaworowski accidentally placed his hand in the particle beam, and received a massive dose of radiation that required a partial amputation of his hand. The trial court found for the defendants, which decision was upheld on appeal. *Jaworoswski v. Medical Radiation Consultants*, 594 N.E.2d 9 (Ohio App. 1991).

In general, I would expect a court to find that a professor knew, or should have known, of the danger, and therefore the professor was contributorily negligent or the professor willingly assumed the risk. Further, Workers' Compensation statutes probably prohibit an employee (i.e., teacher or professor) from suing his/her employer in tort over injuries received during the course of employment. A better legal strategy may be for the professor or teacher to bring a products liability suit against the manufacturer of a dangerous chemical or a laboratory instrument, perhaps on a "failure to warn" theory. Products liability is beyond the scope of this essay.

Conclusion

Personal injuries in science laboratories in schools and universities raise a variety of issues beyond the typical personal injury case. These issues span not only tort law, but also education law and the practice of the relevant area of science, engineering, medicine, etc.

In reading the reported cases in this area, I am struck by the inconsistencies among the various state courts in recent years. For example, in *LaVoie*, a college sophomore who put a can of diethyl ether near a flame – a really stupid act – was allowed to recover, but in *Wilhelm*, a 13 year old who was injured while working in a laboratory without supervision, was not allowed to recover. Thus it is difficult to form general rules: results depend on state statutes for immunity, sympathy of a jury and judge, etc.

In addition to the few cases discussed above, there are a much larger number of reported cases of pupils/ students injured during athletic activities that may raise analogous issues.

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this document is at <http://www.rbs2.com/labinj.htm> My most recent search for court cases on this topic was in Nov 1999. version 8 Jan 2000, minor revision 6 July 2005 [return to my homepage](#)

## 4.8 TA Certification for Students Whose First Language is not English

<http://www.uiowa.edu/~iiepes/ESL/eslclasses.html>

### ESL Credit Classes

#### General Information

English as a Second Language (ESL) credit classes are available to UI students whose first language is not English—U.S. as well as international students. International undergraduate students admitted to The University of Iowa with a TOEFL iBT score lower than 100 (600/250, paper/computer) are required to complete an [English Proficiency Evaluation](#) (EPE) before their first registration for classes. (See "English Proficiency Requirement" below.) Some graduate departments may require students to complete an English Proficiency Evaluation regardless of their TOEFL score. Students are required to complete any ESL coursework specified as a result of the English Proficiency Evaluation.

Courses are offered in conversation skills, pronunciation, grammar, reading, and writing. *Students must be enrolled in The University of Iowa in order to take ESL credit classes.*

These classes are designed to improve students' language skills to enable them to successfully complete academic coursework. Students who do not meet the minimum English language requirements will be required to take courses in the non-credit [Iowa Intensive English Program](#) prior to beginning University coursework.

#### English Language Proficiency Requirement

##### *International Students:*

All international students with a TOEFL iBT score of less than 100 (600/250, paper/computer) are required to take the [English Proficiency Evaluation](#) (EPE) prior to their first registration. Some graduate departments require all students to take the exam, regardless of TOEFL score. Students are not allowed to register until this evaluation has been taken. The University charges students' accounts \$30 for the EPE.

##### **U.S. Students:**

U.S. students whose first language is not English may also be required to take the English Proficiency Evaluation as part of the Orientation and Registration program. Exceptions to this requirement are made for students whose ACT English score is 21 or higher (SAT I verbal score of 540 or above) and for those who score 100 or higher on the TOEFL iBT (600/250, paper/computer).

##### *EPE Results/Enrollment Policies*

Results of the EPE are given to undergraduates at their academic orientation. Results of the EPE for graduate students are sent to departments to be given to the student's academic advisor, so students should check with their advisors for results. If you check with your department and they do not have your results, please have the department call the ESL Office. In compliance with confidentiality procedures, under no circumstances will results be given to students over the phone.

Based on the results of the EPE, students will be told one of three things:

- that no further work in English is necessary,
- that they are required to take ESL classes, or
- that they are required to take classes in the Iowa Intensive English Program before beginning regular coursework, and/or are limited in the number of credit hours of regular coursework that can be taken. This occurs in cases where a student scores below the level required for academic work.

If the EPE indicates that coursework is necessary, the courses are REQUIRED for all students. For undergraduates, any required ESL classes must be taken before taking Rhetoric classes. To enroll, the student should come to the ESL Office.

ESL courses cannot be taken Pass/No Pass or Satisfactory/Unsatisfactory.  
ESL courses must be taken for 3 semester hours.

Once enrolled, undergraduate students are not allowed to drop required ESL courses.

Individuals such as post-docs and visiting professors who are interested in taking ESL classes must also be enrolled in the University in order to take ESL classes. For information regarding special student enrollment procedures, please contact the International Admissions office (115 Calvin Hall, 319-335-1534).

Spaces in ESL classes will be made available to students who are not required to take the classes if space is available and the class is appropriate for the student. Students who are not required may place their names on waiting lists for the classes after those who are required have registered. After the first few days of each semester, class lists will be verified with instructors, and if there is room in the classes, the spaces will be offered to students on the waiting lists.

Registration for all ESL classes requires special permission. Students may obtain permission by going to the ESL Office in 1112 University Capitol Centre. Permission cannot be given to students over the phone or via e-mail.

### **EPE Re-testing**

Students who wish to be re-evaluated may do so *only if they have just one ESL class remaining*. Students who wish to be retested should go to the ESL Office at 1112 University Capitol Centre to receive permission and information about the test date. Typically, retests occur in November and April. Testees will be charged \$30.

### **Course Descriptions**

Courses taken to meet the English proficiency requirement may not be taken P/N or S/U, and must be taken for three credit hours. For undergraduates, all required ESL courses must be completed before registration in Rhetoric courses. Once enrolled, undergraduate students may not drop required ESL courses. The courses are taught by TAs in the Department of Linguistics.

#### **103:184 ESL CONVERSATION SKILLS, 3 s.h.**

This course provides a structured opportunity to develop fluency in spoken English. Class members study and practice speaking skills needed to function appropriately in a U.S. academic setting as well as in U.S. society in general. Students also are introduced to some pronunciation, grammar, and vocabulary related to the goal of communicative competence.

#### **103:185 ESL PRONUNCIATION & ORAL SKILLS, 3 s.h.**

The emphasis in this course is on the development of skills appropriate to formal speaking, as well as on the diagnosis and correction of persistent pronunciation problems, and on the correct use of stress and intonation. Students practice giving oral presentations and participate in discussions on assigned topics. Work outside class in the Language Media Center is required.

#### **103:186 ESL GRAMMAR, 3 s.h.**

This class studies the structures of English with particular focus on patterns of grammar which are frequently troublesome for nonnative speakers of English. Students practice applying these structures through extensive speaking and writing, and by completing a variety of exercises and writing brief essays.

#### **103:187 ESL WRITING, 3 s.h.**

The emphasis of this course is on discourse considerations, more complex grammatical constructions, and the usage of formal vocabulary of the type expected of university students. Students practice various styles of organization, types of argumentation, and methods of analysis used in academic writing.

#### **103:189 ESL READING SKILLS, 3 s.h.**

This course focuses on increasing reading speed and comprehension of the sort of writing and vocabulary encountered by university students. Exercises, discussion, and note-taking assignments are used to develop skills of critical analysis.

ESL credit courses are offered only in the summer, spring, and fall semesters. Up-to-date schedule information is also available on [ISIS](#).

# Departmental Facilities

## 5.1 Library

<http://www.lib.uiowa.edu/physics/>

### Student's Guide to the Physics Library

#### Physics Library

350 Van Allen Hall (VAN)  
335-3082  
<http://www.lib.uiowa.edu/physics>

#### Leo Clougherty

Physics Librarian  
leo-clougherty@uiowa.edu

#### Kari Kozak

Science Outreach Librarian  
kari-kozak@uiowa.edu

#### Kerry Minner

Library Assistant  
kerry-minner@uiowa.edu

#### Spotlight:

##### Web of Science

Web of Science is one of several databases that are part of Institute of Scientific Information's (ISI) Web of Knowledge. Included in this database are Science Citation Index Expanded to 1900, Social Sciences Citation Index to 1956, and Arts & Humanities Citation Index to 1975.

#### Library Hours

##### 2009-2010 Academic year:

Monday-Thursday 9:00am - 7:00pm  
Friday 9:00am - 5:00pm  
Saturday- Sunday Closed

##### Interims, summer sessions, and breaks:

Monday-Friday 9:00am – Noon  
1:00pm - 5:00pm  
Saturday- Sunday Closed

Hours are subject to change. Closed on University holidays: The library may close the day before a holiday or close early. Changes will be posted on the Physics Library web site. Main and branch library hours are available at <http://www.lib.uiowa.edu/locations/hours.html>.

#### The Collection

The Physics Library houses approximately 50,000 volumes of books and journals as well as sky maps and other resources. More books and journals are in storage at the Main Library.

If an item is in storage, there are two options for retrieval:

- You may request delivery in Infohawk, the library online catalog. Allow 2-4 weekdays for delivery.
- You can go to the Main Library and request the item from the Circulation Department.

#### Library Services Highlights

The library can help you in a variety of ways. Some examples:

- Instructional Support
  - Give short or class length demonstrations on library resources and services to students, faculty, and/or staff
- Research Support
  - Meebo Chat - Chat live from anywhere with a librarian from a variety of links of the website
  - Individual Assistance - the library staff is able to meet individually or with a group to provide assistance.
  - Request the library purchase a resource or book - email kari-kozak@uiowa.edu or lib-phys@uiowa.edu. Please provide author, title, publisher, ISBN and date.
  - Authorization cards - If you will be checking items out for a faculty member, please ask the Physics Library Assistant for further information
  - Subject Guides - Subject guides for physics and astronomy are currently being developed and will be out later this semester on the website.

## Circulation Procedures

A valid University of Iowa student or faculty/staff ID, faculty authorization card, or borrower's permit is required to check out material.

|                                |            |                                |        |
|--------------------------------|------------|--------------------------------|--------|
| Loan periods for books are:    |            | Loan periods for journals are: |        |
| Undergraduate students         | 4 weeks    | Undergraduate students         | 1 week |
| Graduate students              | 1 semester | Graduate students              | 1 week |
| Faculty and professional staff | 1 year     | Faculty                        | 1 week |
| Merit staff and permit holders | 4 weeks    | Professional and merit staff   | 1 week |

ALL BOOKS AND JOURNALS ARE SUBJECT TO RECALL. A book may not be recalled during the first 2 weeks of the loan except for reserve. If recalled for reserve, the item must be returned immediately. Recall notices are sent by email.

Any book or journal may be renewed on or before the due date if the book has not been recalled. Graduate, staff and faculty book loans must be brought to the library for renewal. Undergraduate students may renew up to five books online or by telephone. All journal loans must be brought to the library for renewal.

Fines for overdue materials will be billed through the University Business Office. If an overdue item is not returned, the borrower will be billed for the replacement cost of the item and fined the maximum fine. The Physics Library Assistant will answer questions about fines and book/journal charges.

*Research means that you don't know, but are willing to find out.*

*- Charles F. Kettering*

### Reserve

Reserve materials are kept at the circulation desk. All borrowers must present a valid University of Iowa ID to check out reserve material. Please ask for reserve books by the title of the book. Instructors' materials such as lecture notes, exams, and solutions are posted on ICON. The loan period for most reserve items is 2 hours. Few are for library use only or 3 day loans.

### Electronic Resources

Many electronic resources to scientific literature can be accessed through the web from the Libraries' InfoHawk directory or the Physics Library web page. Many of our scientific journals are now available online. Please contact the Physics Library staff for assistance in using InfoHawk or for advice and assistance in using electronic resources.

### Interlibrary Loan

Books, journal articles, and other research materials not owned by the University of Iowa Libraries can usually be borrowed from other libraries. There is an electronic request form at <http://www.lib.uiowa.edu/ill/>.

### Delivery Service

Library users may request via InfoHawk that materials owned by one University of Iowa Library be sent and held for pickup at another University of Iowa Library or delivered to an office on the UI campus via campus mail.

### Article Service

Copies of journal articles and book chapters from a title held in any University of Iowa library (with the exception of Law and the Curriculum Lab) can be scanned

### Reference Assistance

Reference assistance is available, Monday-Friday, 9:00 a.m.-5 p.m. when full-time staff is on duty. Student assistants will help as much as possible at night and on the weekends, but may direct the you to return when full-time staff is available or ask for a telephone number or e-mail address for staff to contact you. Reference or directional questions may also be submitted to the Physics Library's e-mail address [lib-phys@uiowa.edu](mailto:lib-phys@uiowa.edu) or by contacting the library staff directly.



## 5.2 InfoHawk

<http://infohawk.uiowa.edu/F>

### Using the Library Catalog Through InfoHawk

#### Where's the Library Catalog?

On the Web, go to: <http://infohawk.uiowa.edu> From the **InfoHawk** screen, select **University of Iowa Libraries Catalog**. Note that from the InfoHawk screen you may also get into other catalogs such as the UI Curriculum Lab and the State Historical Society of Iowa. The **InfoHawk** screen also includes links to other library services and resources.

#### What's in the University of Iowa Libraries Catalog?

The catalog provides access to the holdings of the UI Libraries and the Law Library. You can use it to find books, to determine if the library subscribes to a particular journal or magazine, and to find videos and other materials.

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#### How do I search?

To locate books, videos, periodicals, and other materials, select the UI Libraries catalog (see above) and indicate the type of search you want: basic for a simple author, title, subject, or keyword search; advanced for a complex keyword search.

**Basic searching.** When you want an alphabetized list of authors, titles, series or subjects, use the basic search screen. Select an appropriate search from the pulldown menu. For example, to search for works by the author Peter Greenaway, choose "Author beginning with" and type greenaway peter. To find a book titled Introduction to Sociology, choose "Title beginning with" and type introduction to sociology. To find a periodical titled Journal of Economics, choose "Title beginning with" and type journal of economics.

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**Search tips.** Disregard initial articles (a, an, the) in all languages. Lower-case letters will find capitalized words: share finds share, Share and SHARE. When you're not sure of an exact author, title or subject heading, use **keyword searching**. Select an appropriate search type from the pulldown menu. For example, to search for materials on ozone, choose the search "Keyword Anywhere" and then type ozone in the "Search for" space. To find material by an author whose last name you think is Kundera, choose "Keyword in Author" and type kundera.

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**Search tips.** Use the ? character to find records that contain portions of words. For example, gun? will find gun, guns, gunning, etc.; ?ology will find psychology, typology, etc. If your search retrieves too many or too few records, try an advanced search.

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**Advanced searching.** Use the advanced search when you have a complex keyword search or when you want to broaden or narrow a keyword search. You may define your search type to retrieve the "Keyword Anywhere," or only from specific fields such as Author, Title, Subject, etc. For example, an author word search for grant will retrieve records in which only Grant is an author.

If you want the words you are searching for to occur only next to each other in the order typed, select yes under the adjacency column. For example, a non-adjacent search for heat engineering will retrieve records with the words side by side as well as records in which both words occur in any order and with any number of words between them.

You may specify the logical relationship between words by using a Boolean operator: AND specifies that both words or phrases must be present; OR specifies that either or both of the words or phrases must be present; and NOT specifies that the preceding word or phrase must be present

while the following word or phrase must not. For example, a search for adolescent OR teenager will retrieve records with either or both words while adolescent NOT teenager will retrieve records with only adolescent.

You may also limit your search to particular languages, formats, locations, and dates.

**Examples.**

- If you're looking for a book by someone named Smith and the title has the word legal in it, try the search: "Author Words" smith AND "Title Words" legal
- If you're looking for information about using computer graphics for Web sites, try the search: "Subject words" computer graphics and select adjacency AND "Keyword Anywhere" web site?
- If you're looking for a video of Shakespeare's The Tempest, try the search: "Author Words" shakespeare AND "Title Words" tempest AND "Limit Search to Format" Video – All

**Need more help?**

For detailed explanations check the help and search hints screens. Command functionality varies slightly from database to database. For additional help, please consult a library staff member.

## **5.3 Machine Shop**

# Financial Support

## 6.1 RAs and TAs

From [http:// www.physics.uiowa.edu/graduate/financial\\_aid.html](http://www.physics.uiowa.edu/graduate/financial_aid.html)

We make every effort to pay our graduate students an attractive stipend. Most students have what is called a 50% appointment, with the following stipends:

Stipends for 9-month Academic Year, 2009-2010

TA \$18,850 (\$17,850 to foreign nationals until they pass the speak-lect test earning a B or above)

RA \$18,850

Stipends for summer 2009

TA or RA \$4,188 (typical for 2-month appointment)

For updated stipend information, contact us or visit our website.

Students with at least a 25% appointment:

- Receive health insurance benefits in the form of the Graduate Student Health Insurance Allowance.
- Pay the resident tuition rate ([www.registrar.uiowa.edu](http://www.registrar.uiowa.edu)), which varies according to the number of semester hours. In 2009-2010, it is \$7,863 for 9 hours.

### Additional tuition support

The Department may offer tuition support to highly qualified students with good GRE subject scores and strong grade point averages. All students who apply for admission are automatically considered for this tuition support.

Students holding a 25% or greater teaching or research assistantship appointment will be assured a tuition scholarship. The tuition scholarship for academic year 2009-2010 is \$5,230. The tuition scholarships will be applicable only for the academic year and does not include scholarships for summer semester enrollment. These rates for the tuition scholarship are based on a 9 s.h. or greater registration and will be pro-rated as related to each student's registration. The tuition scholarship is not affected by the level of appointment above 25%.



Students in Commons Room

The Graduate College also offers tuition scholarships. See the [graduate assistant tuition scholarship information page](#) for more details.

## About TA positions

- Most TAs have a half-time (50%) appointment.
- The most common assignment is for TAs to teach three sections of a physics laboratory, each with three hours of contact with students, or four sections of an astronomy lab, each with two hours. These TAs work under the supervision of the laboratory coordinator and the professor in charge of the course.
- Other TAs serve as tutors, proctors, or graders.
- A half-time appointment requires up to 20 hours per week of service to the department. At the same time you can take a full load of courses, up to 12 semester hours.

Some TAs also receive support as an RA. It is common for a student to be supported as a half-time TA during the academic year and as an RA for up to three months during the summer. Some students are supported during the academic year partly as a TA and partly as an RA. For example a student supported with a one-quarter-time TA position and a one-quarter RA position would serve up to 10 hours per week as a TA and serve as an RA in the remaining time.



TAs in instructional labs

## 6.2 Travel Funds for graduate Students

### Departmental Funds

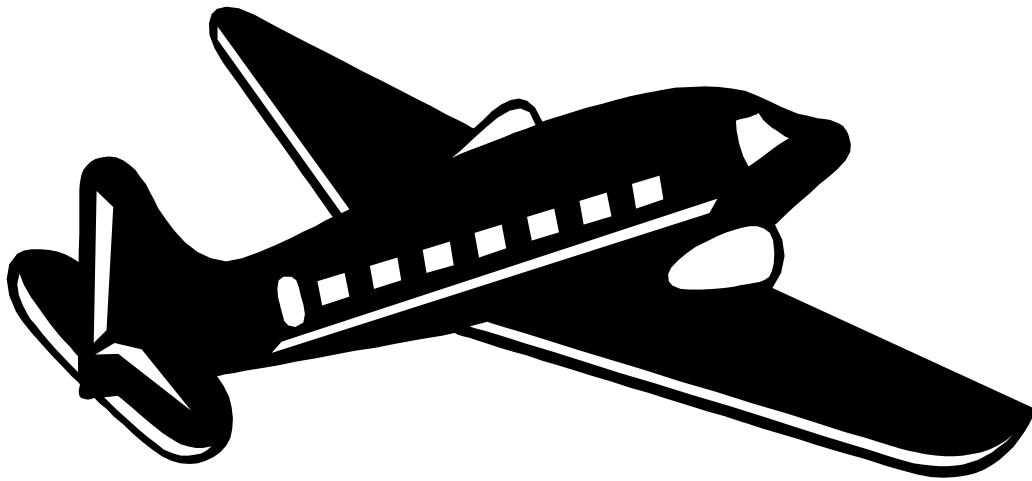
The Department of Physics and Astronomy recently received a limited amount of funds from one of our alumni to provide graduate student program support. One of the items specified that these funds may be used for is graduate student travel.

Requests for funding should go to Aaron Votroubek. You will need to explain the rationale for this support, as well as provide a travel budget. This should be submitted one month in advance of the trip.

### Other Sources

A graduate student can apply to the Graduate Student Senate for travel funds - forms can be gotten from the Graduate College or downloaded from the web - <http://www.uiowa.edu/~gss/travel/index.html>

You may also want to try contacting Student Government at 335-3860; they have had some travel funds in the past.



## 6.3 Emergency Loans

Heather Mineart in Room 204 is responsible for the distribution of the emergency loan fund.

The Department is able to provide short-term financial aid to departmental graduate students through the G.W. Stewart Emergency Loan Fund. Distributions are based on the critical financial needs of a student. An interest free payback plan is devised at the time the money is borrowed.

### {EXAMPLE}

#### G.W. Stewart Emergency Loan

Consumer Credit Transaction Note and Disclosure Statement  
MFK: 530/11/1280/00000/71955400/0000/000/00000/00/9430

#### PURPOSE:

A loan fund to provide short-term emergency student financial aid to students in the Department of Physics and Astronomy.

#### BACKGROUND INFORMATION:

Established by Stacey Wahl of Ridgefield, Connecticut, in February 1990. This emergency loan fund will provide short-term financial aid to students with the Department of Physics and Astronomy. Named in memory of G.W. Stewart who was head of the Department in the 1920-s and '30's when Mrs. Wahl's husband was a student in the program.

I, \_\_\_\_\_, am requesting an interest free loan from the G.W. Stewart Emergency Loan Fund in the amount of \$ \_\_\_\_\_.

I hereby agree to repay this loan in the following manner:

Repay in full as of \_\_\_\_\_.

Repay in installments of no less than \_\_\_\_\_ per \_\_\_\_\_ beginning \_\_\_\_\_.

The Debtor further understands and agrees, and it is understood between the parties that:

- The Department may, at its option, declare the Debtor's loan to be in default if a payment is not made when due under the repayment schedule established. Immediate payment of the entire unpaid balance of the defaulted loan may be demanded by the Department. Furthermore, the Department may disclose the default, along with other relevant information, to credit bureau organizations.
- Debtor shall immediately inform the Department of any change in address after he or she ceases to be a full-time student at The University of Iowa.

**NOTICE TO CONSUMER – DO NOT SIGN THIS PAPER BEFORE YOU READ IT. YOU ARE ENTITLED TO A COPY OF THIS PAPER.**

I hereby acknowledge receipt of a copy of these disclosures and the note.

\_\_\_\_\_  
Recipient Signature

\_\_\_\_\_  
Social Security Number

\_\_\_\_\_  
Address

\_\_\_\_\_  
Date

\_\_\_\_\_  
Authorizing Staff Signature

\_\_\_\_\_  
Date

**Payment should be made directly to the Cashiers Office (5CH)**

## **6.4 Awards and Scholarships - Departmental**

### **Goertz/Nicholson Memorial Fellowship Award**

This award is given in memory of Christoph Goertz, Ph.D. and Dwight Nicholson, Ph.D. The fellowship was instituted in November 1991 by the wives of Drs. Goertz and Nicholson, Ulrike Goertz and Jane Nicholson, Ph.D., after the death of their husbands on November 1, 1991.

The award of up to \$4,000 is presented each spring to a graduate student in the Department of Physics and Astronomy who demonstrates the promise of achieving excellence in the field, preferably space plasma theory.

A faculty committee reviews and determines the recipient of this award.

### **Nicholson Fellowship**

The Nicholson Fellowship was established by two students of Dwight Nicholson, Mei Mei Shen and Guo-Zheng Sun, in memory of his commitment to helping new graduate students. It is supported by these two individuals and other students and friends of Dwight Nicholson. The scholarship consists of a cash award to help a new graduate student in physics or astronomy pay the miscellaneous expenses of starting his or her graduate career at Iowa. The scholarship will be awarded by the departmental committee responsible for graduate student recruitment. The choice of the individual to receive the award will be based on financial need and promise of academic achievement.

### **Swift Scholarship**

This scholarship is for an entering graduate student in the Department of Physics and Astronomy. All entering graduate students are eligible for the award, which is given at the discretion of the DEO. No application is required, qualified students are automatically considered.

### **John and Stacey Wahl Scholarship**

John Wahl was a 1944 and 1952 graduate of The University of Iowa's Department of Physics and Astronomy. During the late 1940s, between his graduate degrees, he worked for the Atomic Energy Commission at Los Alamos and later returned to The University of Iowa and received his Ph.D. in Nuclear Physics. During the course of his education, both he and Mrs. Wahl maintained an active family and were constantly under financial constraints. Hence their decision to establish a scholarship fund in 1984 to benefit only those students who are in similar circumstances – with both academic and personal responsibilities.

### **John and Stacey Wahl Scholarship - continued**

Mr. Wahl was employed by the Schlumberger company for 25 years before his death in 1982. He is survived by his wife, Mrs. Mary E. Wahl (Stacey). She received a B.A. degree from The University of Iowa in 1938, taught high school mathematics in Iowa City during the 1940s and is a retired Assistant Professor of Mathematics at Western Connecticut College in Danbury.

This scholarship is designed to fund two \$2,000 awards each fall to physics or astronomy students, with a preference for graduate students who are married and have children.

The departmental faculty determines and approves who receive these awards.

## **6.5 Awards and Scholarships - University**

### **Outstanding Teaching Assistant Award**

The University of Iowa Council on Teaching administers and awards approximately 25 awards of \$1,000 each academic year to teaching assistants who have demonstrated outstanding ability as teachers at The University of Iowa.

Teaching assistants from all academic units may be nominated for these awards. Nominees must certify that they have had formal student contact during one of the academic semesters. A teaching assistant who won an award last year may not be nominated this year.

Nominations may be initiated by students, faculty, colleagues, departmental executive officers (DEOs), or deans. Self-nominations are not allowed. The nominations must follow the guidelines specified in the nomination packet. All materials must be submitted to the nominee's department for the DEO's signature. The DEO will forward nominations to the Council on Teaching in care of the Office of the Provost.

Nomination packets are available in January from departmental offices (see Debbie Foreman, 202 VAN) and from the Council on Teaching, 111 Jessup Hall. Nominations are generally due to the departmental DEO in February.

Please reference the following web site for complete information regarding this award:  
<http://www.uiowa.edu/~cot/TA%20Award/otamenu.htm>

## **6.6 Awards and Scholarships – NSF, DOE and NASA**

The National Science Foundation, the Department of Energy and NASA have programs to support graduate students. Please see their web sites for further details:

<http://www.nsfgrfp.org/> NSF graduate research fellowships

<http://www.scied.science.doe.gov/SCGF.html> Office of Science fellowship program

<http://www.nasa.gov/> NASA fellowships