Greetings from your State Fire Training Academy

We have decided to re-institute this newsletter to improve our communications with you. It is also available on our website at http://www.uiuc.edu/unit/IFSI/. Over the past year, we have undertaken a self-examination effort which has resulted in a Vision for the future we call Vision 2000. Our goal is to reach every firefighter in Illinois with the best fire service training, education and information available. We want to help each firefighter and fire department prepare for and meet the emergency fire service needs of their community. We hope that the information and programs highlighted in this newsletter will help us help you. E-mail us, visit our web site or call toll free (800) 437-5819.

Since 1925, the University of Illinois has been working in partnership with Illinois firefighters to improve fire service education. As we have looked to the future, we want to hear from you about your fire service training needs. We have sent surveys to hundreds of departments and found that there continues to be a demand for certification training; but that there is a significantly larger demand for short 1-3 day classes that focus on hands-on skills and refreshers. In response to this feedback, we have initiated new programs and refined others to better meet your needs. This newsletter provides the latest information on these initiatives. For example:

- **Basic Training.** You have told us that you need basics, so we have developed 1, 2 and 3-day courses, including: core skills, engine and truck operations, HAZMAT, Arson refreshers, weekend rescue certification, improved fire officer courses and live burns.

- **Reduce the Cost of Training.** We had to raise course fees to remain in business; however, we recognize their impact and have initiated several programs to offset costs:
  - Reimbursement for Basic Training. The State Fire Marshal's Reimbursement Claims Task Force allocated $200,000 to deliver basic firefighter hands-on essentials training beginning 1 July 1998. We have a 2-day course to provide training in critical firefighter basic skills and 1-day house/tower burns. Over 125 departments and 600 firefighters have already attended this training. If you want a course, see Firefighting.
  - Regional Training Centers. Centers are now open in Galesburg and Carbondale and will be open soon in Mt. Vernon. The city, career fire department, regional fire association, and IFSI worked together to make it happen. In order to reduce the non-training costs (travel, lodging, food and extra time), we have worked to make regional training sites available to you. These sites are sponsored and run by the local career department and will routinely schedule FSI courses -- if there is demand. Sign up and let us know what courses you want scheduled and when.
  - Veterans Benefits Accepted. We requested and received approval for firefighters who are eligible to receive federal veteran’s education benefits to apply those benefits toward certification courses at the Institute. Call for details.

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We’re on the Web
http://www.uiuc.edu/unit/IFSI/

instructional materials from the National Fire Academy to deliver courses. If you want a course, see HAZMAT/CT.

**WINTER FIRE SCHOOL**
FEB. 6 & 7, 1999
Volunteer Summit. The University of Illinois has provided a grant to conduct regional and state-wide forums to bring together firefighters, fire service leadership, local/state/federal government, industry and educators to create synergy of resources and effort to meet community fire service needs.

Focus on Partnership Development. We realize there are many departments that already have access to training facilities. We are interested in developing partnerships to deliver courses in these regional facilities, with the goal of delivering the same quality hands-on instruction we deliver in Champaign without the student travel costs. Please contact us if you are interested.

76th Anniversary Fire College 3-6 June 1999. Make plans now to attend Fire College. Dr. Dennis O’Neal, Superintendent of the National Fire Academy, has accepted the invitation to be the keynote speaker. We will have an opportunity for you to meet and speak with him Thursday evening 3 June 99. We will have the hands-on training available for all who desire it plus four (4) NFA courses and special events each evening. We are also planning an alumni day on Saturday 5 June 99, with hopes of dedicating a plaque at the site of the nation’s first Fire College. We will be recording living history from the alumni on video tape and have a room set aside for memorabilia. We already have copies of Fire College Proceedings beginning with the first college in 1925. Mark your calendars and plan to help us celebrate this historic milestone in fire service training.

Do You Want to Continue Receiving the FSI Newsletter?
The Illinois Fire Service Institute is mailing this edition of the FSI Newsletter to over 2,500 fire departments and individuals throughout the State of Illinois. In efforts to better serve the fire service, we are asking that everyone who received this newsletter and want to continue receiving it to notify the Institute by calling toll-free at 1/800/437-5819 or e-mail Virginia Stahl at v-stahl@uiuc.edu.

RESEARCH ACTIVITIES
By James Straseske, Associate Director for Administration & Research

When you think of research, there are a number of thoughts that come to mind. The mad scientist creating creatures in their lab, NASA research that produced countless consumer products as a spin-off of space exploration, or thousands of other items that affect your daily life. We are in a constant pursuit of knowledge and products that benefit mankind. Research is a term used to describe new discoveries. Loosely defined, there are two major types of research. The first is pure theoretical activities that assemble information that usually produce a series of other questions. The findings are not always applicable to the real world. The second is applied research which is generally useful information that can be applied to everyday life. In the fire service, theoretical research does not normally connect with the operations world. We are much more pragmatic and require answers that can be automatically applied to operations.

The Illinois Fire Service Institute is beginning to focus on real world issues that affect the fire service. We plan to continue and enhance the time devoted to finding solutions to real world issues.

As we move forward with this objective, we will provide continual updates on the status of the projects.

If you have specific suggestions for applied research activities, please contact me.
A number of factors have come together in the past year or so which are allowing us to take a fresh look at the Fire Service Institute’s structure, roles, strengths, and weaknesses. This resulted in the beginnings of the rebirth of a fresh and more vigorous IFSI, which will continue the best of the “old,” but will principally be looking forward to “new and better” ways to reach and serve all Illinois firefighters in the 21st Century.

We have reorganized structurally to better manage the Institute and our individual program areas. As Associate Director of Academic Affairs, I am responsible for overseeing and supporting all of our instructional offerings. Each of our program areas is managed and operated by a Program Director. These Programs Directors can answer questions for you, and assist in setting up classes within their subject area.

- Fire Fighting: Rick Fritz
- Fire Officer (Cert.): Bill Farnum
- Hazardous Materials: Nancy Ducey
- Industrial: Howard Eskridge
- Investigation/Prevention: G. T. Smith
- Rescue: Terry Sutphen

We are searching for new and improved ways to make top quality training Available, Accessible, and Affordable to every Illinois firefighter who wants it. Your ideas and suggestions on how we can do this are requested and welcomed. Call us at (800) 437-5819 or visit our web page at www.uiuc.edu/unit/IFSI/.

IFSI is striving to build working Partnerships with fire service leaders, organizations, and educators. This is an unlimited concept, and involves many things, including possibly sharing delivery of some classes. We are expanding our Field Staff to improve our local representation in all areas of the state. Emphasis on practical hands-on training will continue.

Providing better training opportunities for volunteers is one of our initial goals. This is being addressed in part via Regional Training Centers and the Reimbursable Funded classes.

We are also looking at ways to better meet the needs of career firefighters and departments. Arrangements for less expensive, but high quality, hotel accommodations in Champaign, shift sensitive 2-3 day formats, and regional training are steps we are taking. Some of our courses are now eligible for Veteran’s Benefits, and EMS CEUs.

In the long run, we hope “Distance Connectivity” (computers, etc.) will enable both career and volunteer firefighters to access much of their cognitive training at home, and then come to IFSI/Champaign, or our Regional Training Centers, for hands-on practical training. This will enable people to learn at their own pace and time, and also reduce the over-all cost of training.

Last year, we had no choice but to quit losing money on courses we ran, as had been the practice in the past. Our Fire Prevention Fund money’s purchasing power was only 85% of what it had been in 1982. Thus we had to quit “giving away” training, and begin charging a fair price, or we couldn’t continue to operate. The cost of fire apparatus, turnout gear, and everything in a fire department’s budget, except training, had risen significantly during that time period. Our budget could no longer subsidize training. Departments must begin to develop more realistic training budgets. We are working to keep costs down, and will strive to develop sponsorship to help offset training costs, but ultimately, departments have the responsibility to adequately provide for training their people. Top quality training is the key to success and delivering good service to the public. As your State Fire Academy, we will work with the fire service, government, and business and industry to help provide this training.

Again, your ideas, suggestions, and constructive criticism are welcome. You can reach us through e-mail and our Web Site. My E-mail address is d Clark@uiuc.edu.

### Fire Protection District Administration Training Sessions


Training-symposium sessions are for Commissioners, Trustees, Chiefs and Officers of all Fire Protection Districts. Objective of training session is to identify issues and address solutions, which both new and experienced Fire Protection Officials face in the performance of their duties to administer and operate their district. Program is free with a $10 charge for refreshments.

For Information, questions, or comments telephone (800) 524-6620. Please plan to attend one of the following sessions.

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Physiological and Psychological Responses of Firefighters to Simulated Fire Fighting Activities

By Denise Smith, Ph.D. Associate Professor, Skidmore College, Saratoga Springs, NY

Background and Purpose of Studies

It is well known that fire fighting is a strenuous, and at times, dangerous activity. Research has shown, and experience confirms, that fire fighting results in extremely high heart rates, increased body temperature and subjective feelings of fatigue. However, surprisingly little research has been done to systematically describe the magnitude of the physiological or psychological strain associated with strenuous fire fighting activities performed in a hot and hostile environment. The purpose of these studies, therefore, was to describe the effects of strenuous live-fire drills on selected physiological and psychological responses.

Study Designs

We conducted several studies under controlled field conditions at the University of Illinois Fire Service Institute (FSI). Participants in these studies included paid, professional fire fighters, fire fighting recruits who were enrolled in the Fire Academy course at FSI, and fire fighters enrolled in the Breathing apparatus Specialist Course (SmokeDivers) at the FSI. For all tests, we asked subjects to perform simulated fire fighting tasks in a training structure that contained live fires. In two of the studies, we asked all of the participants to perform three standardized sets of drills as quickly as possible. For these studies, subjects performed three sets of the same four tasks; namely: dragging a hose, carrying a 5 gallon pump can up two flights of stairs and discharging it, hoisting a hose, and chopping on a block of wood. The building contained live fire on the second and fourth floors. During these studies, physiological measurements of heart rate, tympanic membrane temperature, rectal temperature, and aortic blood flow were measured. Blood samples were also obtained and analyzed for blood volume, standard blood chemistry, and immune function.

Results

Cardiovascular Strain

All of our studies have found that HR reaches maximal or near-maximal levels within several minutes of initiating strenuous fire fighting activity. An important finding in our studies was that stroke volume (the amount of blood pumped by the heart with each beat) decreases as fire fighting activity continued. This has important implications since heart rate is unable to compensate for the decrease in stroke volume since heart rate is near maximal levels from the onset of fire fighting. A major contributor to this decrease in stroke volume is the decrease in blood volume.

Following three trials of fire fighting activity that took a total of 18 minutes, we documented a 15% reduction in blood volume.

Metabolic Requirements

Fire fighters perform strenuous muscular work during fire suppression activities. Sixteen minutes of advancing a charged hose and chopping on a block of wood resulted in blood lactate levels of approximately 4 mM/L. This suggests that fire fighters are relying on both aerobic and anaerobic energy systems to support their activity. Blood glucose levels are not altered appreciably by fire fighting activities, but blood glucose levels may drop to dangerously low levels following 90 minutes of recovery. This suggests that carbohydrate replacement should be considered as part of rehabilitation for fire fighting.

Immune Function

There is an increase in the number of white blood cells (WBC) immediately after performing a series of fire fighting drills. This increase in the total number of WBC continues after 90 minutes of recovery. However, one subset of WBC, the lymphocytes that are responsible for the body protection against specific bacteria and viruses, are lower following 90 minutes of recovery than prior to testing. This suggests there may be some immune suppression that could negatively affect a fire fighter’s ability to resist certain infections. Along with the suppressed number of lymphocytes following 90 minutes of recovery the hormone cortisol remains elevated after recovery. Cortisol is considered a long-term stress hormone and provides another indication that fire fighting is a significant stressor that alters a fire fighter’s physiology for a significant time period.

Blood Chemistry

Ten of the nineteen variables we tested in the blood were changed significantly following approximately 20 minutes of strenuous fire fighting activity. These changes were consistent with hemococoncentration accompanying dehydration. Following a 90-minute recovery period, during which subjects consumed 1.7 L of water, most of the variables returned to baseline levels. An important exception to this generalization was glucose. Glucose was at normal levels prior to fire fighting, increased slightly immediately after the fire fighting activity (as expected due to hemococoncentration and sympathetic nerve activation), but was significantly lower following the 90-minute recovery period.

Psychological Data

Our studies routinely find that psychological variables mimic...
the physiological data. As subjects experience greater physiological stress, they report greater psychological strain. It is important to note, however, that known relationships between heart rate (physiological stress) and rating of perceived exertion do not hold true for fire fighters under heat stress conditions. Fire fighters who are at maximal heart rates do not report that they are working maximally.

**Interpretation and Conclusions**

Fire fighting activities cause considerable physiological strain among many of the systems of the body. The magnitude of the physiological stress may explain, in part, why 35-50% of on-duty fire fighting deaths are due to myocardial infarction. The physiological disruption to the hormonal and immune system may persist for at least two hours after completion of the task. In addition to being physically stressful, we have documented the physiological and psychological stress associated with fire fighting.

**Implications and Recommendations**

In order to minimize the physiological disruption that occurs with fire fighting activities, fire fighters should pay careful attention to hydration level. This means being well hydrated prior to fire fighting, as well as aggressive re-hydration following fire fighting. To achieve prior hydration prior to fire fighting, it is recommended that fire fighters drink plenty of water before arriving for duty and throughout their duty day. Fire fighters are also encouraged to avoid caffeinated beverages and other known diuretics. Fire fighters should be aware of how prescription drugs affect fluid balance.

Aerobic fitness will also help minimize the magnitude of the physiological disruption experienced by the fire fighter during strenuous activity. Aerobic (or cardiovascular) fitness provides several benefits; namely, it improves heat tolerance, improves the efficiency of the heart muscle, increases the amount of physical work that can be performed, and it leads to an increased plasma volume.

**More Information**

For additional information, please consult our published papers,

Smith et al (1997), Ergonomics
Smith et al (1996), Aviation, Space and Environmental Medicine

Or, contact:

James B. Straseske, Ph.D.
Fire Service Institute
11 Gerty Drive
Champaign, IL 61820
(217) 333-3801

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**Winter Fire School**

By G.T. Smith, Winter Fire School Coordinator

On February 6 – 7, 1999, the fire service Institute will again host a Winter Fire School. This school was proposed and initiated a few years ago to fill a needed training opportunity. This unit of training is conducted in the dead of winter. Since this time of year may present problems for personnel and equipment alike when doing outside training, the Winter Fire School consists of only classroom courses. This time of year also offers training that is not conducted during spring planting season, summer vacation season, or fall harvest season. For the second year, Winter Fire School will offer a specialized short course track as part of the course offerings. Firefighters desiring to attend short courses need only designate the short course track when enrolling. These firefighters will elect the specific short courses by attending those particular classes during the school.

**The 1999 Winter Fire School Courses Are:**

- **Specialized Short Course Track** (you will attend three of the four hour courses)
  - Rapid Intervention Teams (RIT) - 4 hrs.
  - Firefighting In Buildings Taller Than Your Ladder - 4 hrs.
  - Reading the Building - 4 hrs.
  - Consideration In Purchasing Apparatus - 4 hrs.
  - Fire Service Risk Management - 4 hrs.

- "This Will Kill You" Building Construction - 12 hours
- Fireground Management for Small Career & Volunteer Departments - 12 hours
- NFA Leadership II: Strategies for Personal Success - 12 hours
- NFA Executive Skill Series: Managing and Leading Change - 12 hours

You may register for Winter Fire School on a copy of the registration form in the FSI Training Calendar or on the Winter Fire School registration form contained in this newsletter.
Hazardous Materials Training
By Nancy Ducey, Program Director

The Past....
In 1994, members of the Illinois Fire Service Institute staff designed and developed curriculum that became the basis of hazardous materials emergency response training for the Fire Service in Illinois. We worked in cooperation with the Office of the State Fire Marshal Hazardous Materials Advisory Board. Each step of the way, the state committee recommended changes and approved the development process. The committee adopted the standards for this training from two sources, 29 code of federal regulations part 1910.120 section (q) and the 1994 version of the National Fire Protection Association 472, Standard on Professional Competence of Responders to Hazardous Materials Incidents. When finalized, a copy of this curriculum was distributed to all fire departments in Illinois. Later, after reviewing work done on the national level, we redesigned our programs to meet the guidelines for public sector hazardous materials training. The Illinois Fire Service Institute must follow these recommendations to qualify for funds being distributed by the Federal Department of Transportation under the Hazardous Materials Emergency Preparedness Grant Program.

Why is all this history necessary for the fire service of Illinois to know? It is helpful to understand the kind of dedication that went into the design and development of our current training programs. When these programs were originally proposed, it was the consensus of this committee that they did not want to come back to the drawing board every year to establish new standards for hazardous materials emergency response training. So we painstakingly evaluated each piece of the curriculum to withstand the test of time. It was our desire to be ahead of our time in the development of material; and to address the future needs of the Fire Service. The current curriculum has withstood over four years without major changes.

The Present....
We are now entering 1999 and once more we must evaluate our programs against national standards. In 1997, the third edition NFPA 472 was adopted, and in March of 1998, the new guidelines for public sector hazardous materials training was published. In response to the upgrade of national standards, the Illinois Fire Service Institute, the Office of the State Fire Marshal, the Emergency Management Agency and the Police Training Board worked cooperatively to review the curriculum recommended or used by our State agencies. We used the new standards as the basis of our review and recommendations. Our primary effort has been the awareness curriculum, which we redesigned to meet the new standards and includes information on response to acts of terrorism. The material will be ready for distribution to the Fire Service in January of 1999. Each fire department in Illinois will be allowed one representative to attend a one-day orientation that will give them access to all the material. After this orientation, the material will be available for departments to use for both fire service training and other public sector employee training. For the first time in many years, we will be using one text for all public sector employees.

Operations and Technician programs will follow suit over the next year and the Illinois Fire Service Institute will once again submit recommendations to the Office of the State Fire Marshal for necessary changes to these programs. As stated early in this article, it was the desire of our committee, in 1994, to avoid making major changes in programs so we spent many hours field testing and reviewing our programs. In review of current standards, our efforts have paid off and our programs will need only minor alteration due to the changes in the transportation laws and enclosure of the terrorism objectives in the standard. It is our desire to have all changes to the curriculum completed by fall of 1999. The Illinois Department of Labor will review all curriculums prior to submission to the OFSM and letters of acceptance shall be included in the curriculum packages.

The Illinois Fire Service Institute has again solicited grant funds for hazardous materials emergency response training and monies are available for training. This year, we have initiated a new program to try to offer more programs to more departments. It is a partnership approach to training. We are beginning to sponsor cooperative training with departments that have their own training staff or are willing to conduct a portion of their own programs. We provide our text, the use of our trailer and props for classes. The department provides instructors and student material. The advantage to the department is they can do the lecture portion of their class in the evenings, on weekends, or on a shift schedule, then we come to assist with the practical. We provide the equipment, protective clothing and a facilitator who sets up drills and supervises the use of equipment. If the department or community college use Illinois Fire Institute staff for their training, they can also get accreditation from the Institute for the program. We have done over six programs this year in this manner and it has been an effective means of getting to more firefighters.

We are still offering direct delivery programs, as well, for departments. There is no charge to the department or to firefighters for attendance of these open enrollment programs.

The Future.....Terrorism
We have received funds to train firefighters in responding for acts of terrorism. Over the next year, we are prepared to accept applications for a National Fire Academy program called Emergency Response to Terrorism: Basic Concepts. It is a two-day program. We will conduct this training on a shift schedule, as well as on weekends to meet the needs of both the paid departments and the volunteer population that we serve. By January of 1999, it is our desire to have a calendar of programs throughout Illinois for firefighters to attend. There will be no charge to the department or firefighters for this program. Representatives from both the Illinois Fire Service Institute and the Illinois Emergency Management Agencies will be in attendance of the scheduled programs. It is our desire for the fire service of Illinois to understand the State of Illinois' plan for response to acts of terrorism.

At the State level, organizations, such as the Office of the Fire Marshal, the Illinois State Police, the Illinois National
Guard, the Federal Bureau of Investigation, the Illinois Environmental Protection Agency, the Illinois Police Training Board and the Illinois Fire Service Institute, have joined forces to resource training and response needs for the State of Illinois. It is our desire to open the doors of communication between the fire service of Illinois and the organizations that will be present at a critical incident involving an act of terrorism or mass disaster.

Clandestine Drug Labs
Our latest effort has been in the design of curriculum for responding to clandestine drug laboratories. The number of methamphetamine clandestine laboratories has been on the increase over the last year, and we are working with the Police Training Board to develop a four-hour program for the hazards of responding to this type of drug lab. It is our desire to have this curriculum available by spring of 1999.

How Do You Get Involved.....
That is what is happening with the hazardous materials program at IFSI. If your department would like to offer any of the programs discussed in this article, simply turn in a request for training form, and upon receipt of this form, you will get a list of requirements to sponsor the programs and be contacted for possible class dates. It is our desire to make it as simple as possible for departments to get the training they desire and need. Your goals are our goals.

“Emergency Response to Terrorism – Basic Concepts”
A new NFA Class is available through FSI. “Emergency Response to Terrorism – Basic Concepts” A 16-hour program free for all fire departments. We can conduct the class on a shift basis, or weekend format to increase the availability of the program. A department need only submit a request for training form to schedule the class. It will be offered through June of 1999. Contact Nancy Ducey for details (217) 244-5108.

From the Watchdesk
By Rick Fritz, Program Director

Welcome to the first of many columns in the new IFSI Newsletter. In this column, I hope to keep you informed as to changes, programs, and new stuff available to you in the firefighting programs.

The biggest change in IFSI firefighting training right now is the availability of Essentials Core Competency training, house burns and tower burns with funding from the Office of the State Fire Marshal, Reimbursement Fund.

This program allows IFSI to deliver these specific programs to area fire departments at no charge. We have been very busy scheduling and delivering these classes. We’ve done several house burns, a tower burn or two, and have lots of scheduled Essentials classes.

Many of the regularly scheduled programs have been cancelled this calendar year due to lack of enrollment. Weekends, Smoke Divers and some of the NFA classes have been cancelled while other classes, especially Academy, Engine Company Operations and Truck Company Operations, are going full tilt.

New to the grounds here at IFSI are the “tin cans” or Sealand containers that have been set in place and have been in use since early June.

We have four “tin cans” that have been set up as burn props. They provide a quick and easy way to conduct basic hose, ladders and breathing apparatus training. They have been in heavy use by area departments for training. Currently some of the staff instructors are working on modifications to make the training more realistic.

Early this summer, we took possession of a 1975 Hendrickson/LTI aerial platform that will allow us to offer greater truck company and aerial operations classes in the future. We continue to improve the fire apparatus fleet to be able to offer realistic training with a variety of fire apparatus.

In the near future, we plan to offer new programs in a shorter format, making the classes more intense, more realistic and more affordable.

In the works is a total re-vamping of the Smoke Diver’s program and Academy. The Engine Company Class and the Truck Company Class will replace the FAST class after this year. (Sign up now for the last FAST classes.) We are going to develop a high rise class; commercial building class and some other classes designed to give you an opportunity to get some good hands-on training in very specific areas.

Officer’s training will continue with the Fire Company Officer’s School and the First-In Officer program.

Saving Our Own and other special programs involving R.I.T. teams are also being planned.

We are currently watching with interest the development of the new NFPA committee developing training standards for career fire departments. IFSI staff members had a direct input on the new NFPA 1001 standard, NFPA 1002 (Driver Operator) and we are waiting on the final drafts of NFPA 1003, Airport Firefighter.

It has been an exciting year, and many changes have already occurred, and many more are to come. I will keep you informed as best I can through this newsletter or through flyers announcing new courses.

Stay safe.
Technical Rescue Training
By Terry Sutphen, Program Director

Technical Rescue – what is it? It seems that in the fire service any rescue response not involving fighting fire has been classified as “technical rescue.” The term also suggests the use of knowledge, skills and equipment that may be unique or more complex than the traditional fire rescue of removing victims from burning buildings.

The most common technical rescue response today is vehicle extrication. This, coupled with EMS response, has become the primary focus of many fire/rescue agencies. Other rescue problems being encountered demand that rescuers be more highly diverse in their knowledge and skills.

As society has grown, so has the demand for more rescue service. The tradition of the fire service is to respond to every call for help and do the best we can whether or not we have the know-how and equipment to do the job safely and effectively. Sometimes this approach has had serious consequences. Statistically, would-be rescuers suffer 60% of deaths and injuries occurring in rescue attempts. Government has responded to this statistic by regulating worker safety and the rescue response to injured or trapped workers. Federal OSHA now either regulates and/or influences how fire/rescue agencies prepare and respond to rescue problems. While Illinois is not an “OSHA state,” the Illinois Department of Labor (IDOL) is beginning to address the issue of fire/rescue activities and IDOL is using OSHA regulations as guidelines.

This creates a problem for the local fire/rescue agency. What services shall they provide? Do they specialize or do they try to handle every rescue problem that comes along? Where do they obtain the training and equipment needed to be ready to handle the rescue problem?

As the designated Illinois Fire Training Academy, FSI continues to provide rescue training to the fire service. FSI has a variety of courses designed to provide fire service personnel with the knowledge and skills needed to respond to the specialized rescue problems. FSI rescue training can be delivered in several methods, from the traditional 40-hour in-depth skill development class, to the 8-16 hour awareness/participation class.

We recognize that not everyone is able to attend a 5-day (40-hr.) course, so we are scheduling a series of modularized course offerings that will be held on weekends at various on and off-campus sites. This will provide the volunteer firefighter the opportunity to obtain the training needed for these specialized rescues over a period of time. The knowledge and skill requirements will remain the same, but the availability of the training will be increased.

In addition to the in-depth 40-hour course, FSI also hosts short courses that deal with specialized rescue problems. These courses will be scheduled throughout the year, but local fire/rescue agencies can request or contract these courses.

Many fire/rescue agencies have a rescue problem that they see as having a high probability of occurring in their response area. We can help to develop and customize classes to fit the department’s training needs.

In addition to the course offering, we are developing a rescue facility at the FSI training site. This facility will have a variety of training props and structures to simulate actual rescue problems. As this facility develops, more class offerings will be available.

We are also helping the Regional Training Sites develop local props and structures to be used for rescue training. We will be using these training sites to host in-depth and specialized rescue training activities.

So how does the local fire/rescue agency utilize the FSI rescue program to meet their training needs? There are several methods of course delivery available:

- Scheduled courses listed in the annual calendar
- Customized short courses
- Contracted in-depth courses
- Training activities held at Regional Training sites

To obtain further information on current or future courses, or help in gaining customized rescue training, contact Terry Sutphen, Rescue Program Director, at (217) 333-8927, FAX (217) 244-6790, or e-mail tsutphen@staff.uiuc.edu. We are ready to help meet your rescue training needs.

FSI Scheduled Rescue Course:
- * Roadway Extrication
- * Auto Extrication Technician II
- Motorsport Fire/Rescue
- * Confined Space/Trench Rescue Awareness
- * Trench Rescue
- * Confined Space Rescue
- Grain Bin Rescue
- Surface Ice Rescue
- * Vertical Rescue I, II, III
- * Structural Collapse (in development)
Auto Extrication
By G. T. Smith, Program Coordinator

The automobile extrication training program at the Illinois Fire Service Institute comes in various forms to fit the training needs of the individual firefighter and fire department.

One of the popular classes at the Annual Fire College is the two-day auto extrication course. This class is repeated to provide two opportunities for the firefighter to attend this program during fire college, in addition to attending another class.

A fire department may also elect to have FSI tailor a training program to fit their department’s needs and time schedule. A program of this type is usually delivered at the department’s own fire station and course fees are calculated according to the number of hours/days of training desired by the department.

Motorsports Fire/Rescue
By G.T. Smith, Program Coordinator

The Motorsports Fire/Rescue course is a specialized course designed to provide the course participant with basic information needed to provide fire/rescue services at a motorsports racing facility. This course does not require that the course participant be a member of a fire department. Information and topics covered in the course include:

- Various types of motorsports facilities
- Racing machines
- Types of competition
- Personnel safety
- Fire chemistry and behavior
- Fuels
- Fire extinguishers
- Extinguishing agents
- Driver extrication
- Fire/rescue vehicles and equipment

This course may also be delivered at a hosting fire department or race track facility. If you have questions concerning the motorsports fire/rescue program, you may contact Patty Weiland at (217) 333-8921 or G. Terry Smith at (217) 333-9014 or e-mail gt-smith@uiuc.edu.

Fire/Arson Investigations
By G. T. Smith, Program Director

The Fire/Arson Investigation course series continues to be in demand. The course series utilizes numerous specialty instructors who are experts in their respective field. These specialty instructors include:

- Certified Fire Investigators
- Electrical Engineers
- Insurance Investigation Specialists
- Police Training Specialists
- Attorneys
- Bureau of Tobacco, & Firearms Special Agents
- Photography Specialists
- Office of the State Fire Marshal Special Agents
- Coroners Office Specialists
- Link/Financial Analysis Specialists

In recent years, FSI has offered four series of the three-week course each year. Upon successful completion of the three modules, a firefighter may be certified by the Office of the State Fire Marshal as a Fire Investigator if they are also certified as a Firefighter II. Personnel from the law enforcement community also take this course series and the certification they receive from the Office of the State Fire Marshal is as an Arson Investigator. Questions concerning this program may be directed to Patty at (217) 333-8921 or G. Terry Smith at (217) 333-9014.
Industrial Fire Training
By Howard “Doc” Eskridge, Program Director

Responses to industrial emergency situations frequently present problems uncommon to normal municipal responses. As a result, many industries and individual facilities have developed fire brigades, emergency response teams, or developed response procedures unique to the facility or industry.

The Fire Service Institute is mandated through its enabling legislation to provide training not only to municipal fire organizations, but also to private industry. Industrial training programs, mostly custom designed for the needs and requirements of the company or facility, have been developed for a number of clients.

Various props and scenarios have been developed and constructed to provide realistic training in an industrial setting. For example, the propane training field props represent a fire that has taken place in Illinois. Most of them were in private-sector settings. Additional props are in development to enhance the training capabilities of this field.

Personnel in an industrial setting have an intimate knowledge of the products and processes with which they work. This type of knowledge results from years of experience, and a daily exposure to the activities that individualize a facility. Municipal responses to this type of setting, even with preplanning and specific training, do not provide the level of knowledge held by the employees of the facility.

Municipal fire personnel have a high level of skill and knowledge relating to structure and vehicle fires, as well as numerous other specialty areas.

The key to success in blending the level of knowledge within a facility with the skills of the municipal firefighter is properly blending the activities of the two entities. This cannot be done at the time of an emergency! It MUST be done before an incident takes place. Industries should encourage those that will respond to their facilities to make frequent visits and learn as much as possible about the potentials presented at the site. The municipal fire department must make the industry aware of its capabilities should the need to respond arise.

Before a municipal department responds to an industrial site, a joint agreement on how and when to respond should be developed. One of the most important items to be conveyed from the industrial site to the fire department is WHAT NOT TO DO in the event of a response. At times, what might seem a normal activity could worsen a situation, not make it better.

Many industries use safety flares to burn off waste product or to burn off products during an emergency dump of a process. The flares may present a huge fireball at the time of arrival, but they are “only doing their thing.” Water should never be directed into an industrial furnace or the firebox of a boiler. The presence of a fire in these areas is normal, and unless directed by a representative of the site, don’t put out what doesn’t need to be put out. Otherwise, a steam explosion may be the undesired result.

Municipal firefighters should never move through a facility without a guide. Plant personnel can provide information of where to go, where not to go, and any potential hazards that may be present in the immediate area. The industry representative can maintain communication with the facility and report back to firefighters the progress of activities, or the need to take another course of action.

In turn, the firefighters should keep the guide appraised of the activities of the fire fighting units. This bi-directional line of communication provides for a well-informed, efficient, and effective team effort.

The end result of proper preplanning and training, both classroom and practical, will benefit all concerned. Both formal and informal training methodologies can be effectively utilized.

Each party must remember that the other has special knowledge and skills that are important to the other. Without a mutual understanding and a well-honed working arrangement, the results will be less than desirable. With a good working agreement, losses will be minimized, and the threat to the safety of all will be enhanced.

Training programs for industrial needs and requirements are available through the Industrial Training Program at the Institute. These include structural fire fighting, hazardous materials training, confined space rescue, trench rescue, high-angle rescue, and officer/leadership development. We can often develop a specialized course or series of classes that address specific or unique problems encountered in an industrial setting.

To find out more about the availability of industrial training programs, contact Howard “Doc” Eskridge or Susan Stout at (217) 333-7671.

75TH ANNUAL ILLINOIS FIRE COLLEGE JUNE 3 – 6, 1999
Learn From The Past, Train for the Present, Prepare For The Future
Illinois Fire Service Institute  
WINTER FIRE SCHOOL  
February 6-7, 1999  
Clarion (formerly Chancellor) Hotel  
1501 S. Neil Street, Champaign, IL  
&  
Illinois Fire Service Institute  
11 Gerty Drive, Champaign, IL  
REGISTRATION INFORMATION  
Social Security No. □ □ □-□ □-□ □ □□  
Date of Birth ___________ ___________ ___________  
Month Day Year □ Male □ Female  
First Name ___________ Mi ______ Last Name ___________  
Home Address ___________ City ___________ State ___________ Zip ___________  
Work/Day Phone (_______) ___________ Home/Eve Phone (_______) ___________  
Dept./Organization ___________ Dept. Address ___________  
Dept. City ___________ State ___________ Zip ___________ Phone # (_______) ___________  
Rank /Title ___________ Years of Service ___________  
Status □ Paid □ Paid-on-call □ Volunteer □ Industry  
Education Level □ A. Less than High School □ B. High School □ C. Some College □ E. Bachelor's Degree □ F. Master's Degree □ G. Post Graduate □ H. Doctorate (Ph. D., Ed. D.)  
Method of Payment □ Bill Department □ Bill Student □ Dept. FEIN Number ___________ □ Payment Enclosed  
Signature of Authorization ____________________________  
(Chief / Training Officer)  
Check the box below for the course you are enrolling for.  
☐ Specialized Short Course Track (You may attend any three of the following courses, need not specify)  
Rapid Intervention Teams (4 hours)  
Firefighting in Buildings Taller Than Your Ladder (4 hours)  
Reading the Building (4 hours)  
Considerations in Purchasing Apparatus (4 hours)  
Fire Service Risk Management (4 hours)  
☐ “This Will Kill You” Building Construction (12 hours)  
☐ Fireground Management for Small Career & Volunteer Dep’ts (12 hours)  
☐ NFA Leadership II: Strategies for Personal Success (12 hours)  
☐ NFA Executive Skill Series: Managing and Leading Change (12 hours)  
Training Charge Per Person: $25.00 (Registration postmarked by Jan. 04, 1999)  
$50.00 (Registration postmarked after Jan. 04, 1999 or at the door)  
Hotel Rates: Special rates for Winter Fire School attendees are being offered by the Clarion Hotel. Each individual must make his/her own hotel arrangements. The Clarion Hotel reservation number is 1-800-257-6667.  
You may register with this form or the form in the FSI calendar  
Please make additional copies of this form
Fire Officer Program
By Bill Farnum, Program Coordinator

The coming winter months herald the start of Officer program scheduling in earnest, with most of those programs being completed by fair weather. We are also in the midst of revamping several of the programs, and updating others. I am just now getting an idea of the amount of work required to put forth a quality program. Our goal is to provide the finest program available in the country. If you have ideas on how to accomplish this goal, please feel free to let me know. We have started providing the overheads on Powerpoint and intend to have that project completed by July.

We are looking at the management programs for content and timeliness. Some of the Videos are dated. Even though the material is applicable, the sight of presenters in leisure suits seems to date the material. We are also participating in a committee of the Illinois Fire Chief's Association to make certain that the content of our management programs is comparable.

The Tactics and Strategy 1 curriculum was just standardized by Rick Fritz and will serve as the structure for all classes presented by the Institute. This needs to be done for Tactics and Strategy 2. When this is done, all the Instructors involved in the program will get a copy so we can provide an acceptable level of continuity. Standardized videos will be generated for each of the classes.

I have not had a chance to get involved in the Instructor series yet, however, I am certain the programs are up to date. Rick Scott has provided Instructor 1 on Powerpoint. Thank you Rick.

The coming months promise to be exciting. I anticipate increased enrollment, both on and off campus. We are looking to the Internet for new material and instruments to put these programs on the cutting edge, with online Internet access a requirement in several of the programs. Once again, if you have ideas for improvements, my number is 217/333-9027 and E-mail is w-farnum@uiuc.edu.

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FSI Training Calendar

<table>
<thead>
<tr>
<th>January 1999</th>
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<tbody>
<tr>
<td><strong>Basic Arson Investigator W-1</strong></td>
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<tr>
<td><strong>Down &amp; Dirty Hydraulics</strong></td>
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<td><strong>NFA (ESSI)</strong></td>
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<td><strong>Vertical Rescue I</strong></td>
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<td><strong>Basic Arson Investigator W-2</strong></td>
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<td><strong>Management III</strong></td>
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<td><strong>Fire Prevention</strong></td>
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<tr>
<td><strong>Basic Arson Investigator W-3</strong></td>
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<td><strong>Surface Ice Rescue</strong></td>
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<td><strong>Verbal Judo</strong></td>
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<tr>
<td><strong>Basic Arson Investigation W-4</strong></td>
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<td><strong>NFA Chemistry of Haz Mat</strong></td>
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<tr>
<td><strong>Basic Arson Investigation</strong></td>
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<td><strong>NFA Chemistry of Haz Mat</strong></td>
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<td><strong>Management IV</strong></td>
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<td><strong>Instructor I</strong></td>
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<tr>
<td><strong>Tactics &amp; Strategy II</strong></td>
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<td><strong>Confined Space Rescue</strong></td>
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<tr>
<td><strong>Instructor II</strong></td>
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<td><strong>Motosports Fire/Rescue</strong></td>
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<td><strong>Haz Mat Operations</strong></td>
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<tr>
<td><strong>Confined Space Rescue</strong></td>
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<tr>
<td><strong>Basic Industrial Program</strong></td>
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<tr>
<td><strong>Haz Mat Operations</strong></td>
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<tr>
<td><strong>FSI Training Weekend</strong></td>
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<td><strong>Firefighter II Academy</strong></td>
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<td><strong>Fire/Arson Investigation II</strong></td>
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<td><strong>Grain Bin Rescue</strong></td>
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How to Obtain Training Through FSI:

- Register for scheduled classes listed in catalog, or calendar, and through class announcement flyers.
- Attend classes delivered at Regional Training Centers.
  - Carbondale
  - Galesburg
  - Mt. Vemon
  - Champaign-Urbana
- Schedule training that has been approved for Fire Prevention Fund Reimbursement: (No Charge)
  - Core Competencies (12-15 hours)
  - House Burns (must involve multiple agencies)
  - Tower Burns
- Register to attend NFA sponsored classes. (no charge)
- Contract customized training activities with FSI.
- Register to attend grant supported training:
  - Haz Mat classes
  - "Emergency Response to Terrorism - Basic Concepts"

For more information on obtaining training call FSI at: (217) 333-3800 (800) 437-5819 FAX: (217) 244-6790 E-mail: fsi@uiuc.edu Web Page www.uiuc.edu/unit/FSI
## Illinois Fire Service Institute Offices and Training Center

11 Gerty Dr., Champaign, IL 61820  
(217) 333-3800  
(800) 437-5819  
FAX: (217) 244-6790  
E-mail: fsi@uiuc.edu  
Web Page: www.uiuc.edu/unit/FSI

### Administration

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<thead>
<tr>
<th>Name</th>
<th>Phone</th>
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<tbody>
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### Program Directors

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<tbody>
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### Administrative Assistants

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### Computer Support

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<tbody>
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### Library

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<tbody>
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### Business Office

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<thead>
<tr>
<th>Name</th>
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<th>Email</th>
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<tbody>
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<td>Lori Christman</td>
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<tr>
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<td>(217) 333-8631</td>
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</tbody>
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### FSI Training Site

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
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<tbody>
<tr>
<td>Barry Wagner</td>
<td>(217) 333-9015</td>
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</tbody>
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