

ILLINOIS FIRE SERVICE INSTITUTE



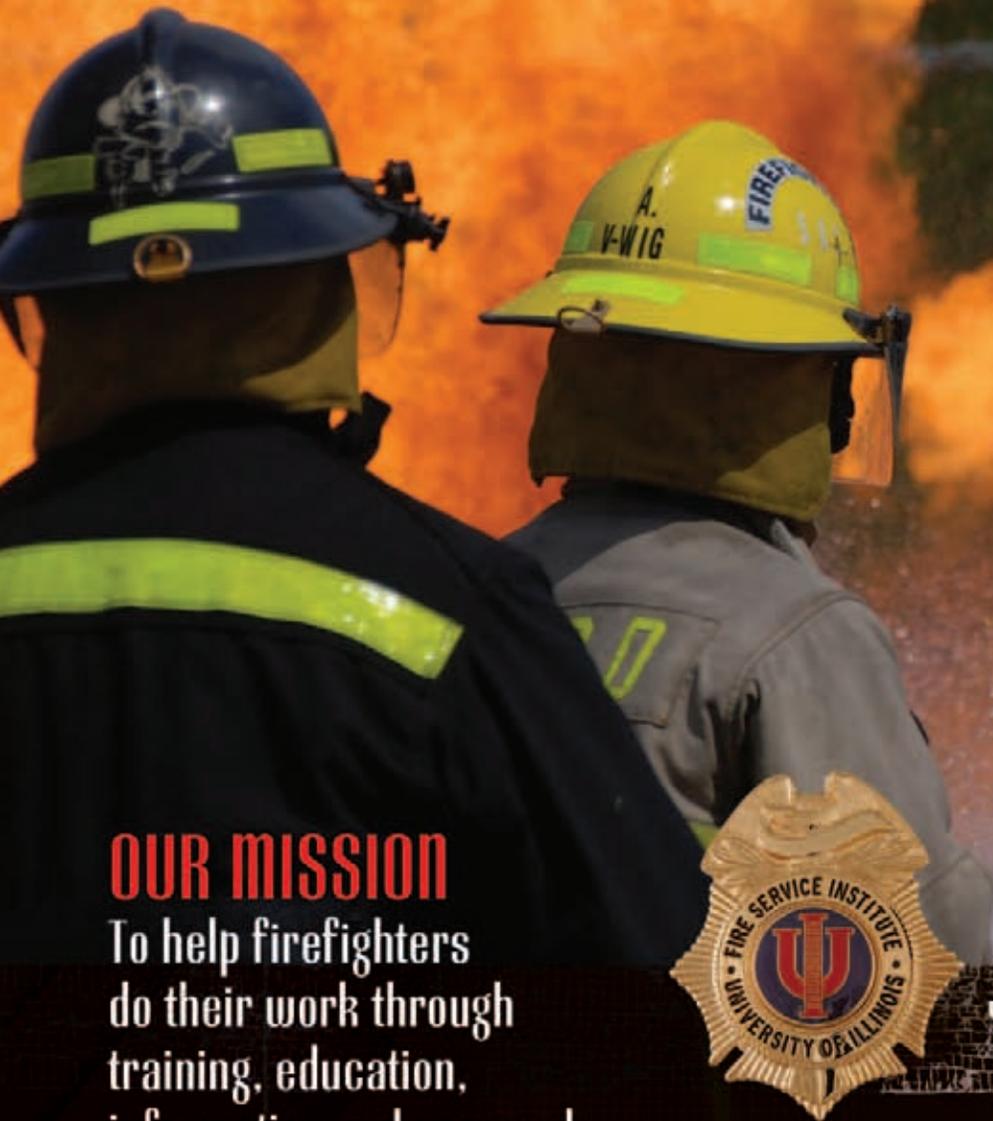
ILLINOIS

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Fire Service Institute

# ANNUAL REPORT

FY-2008

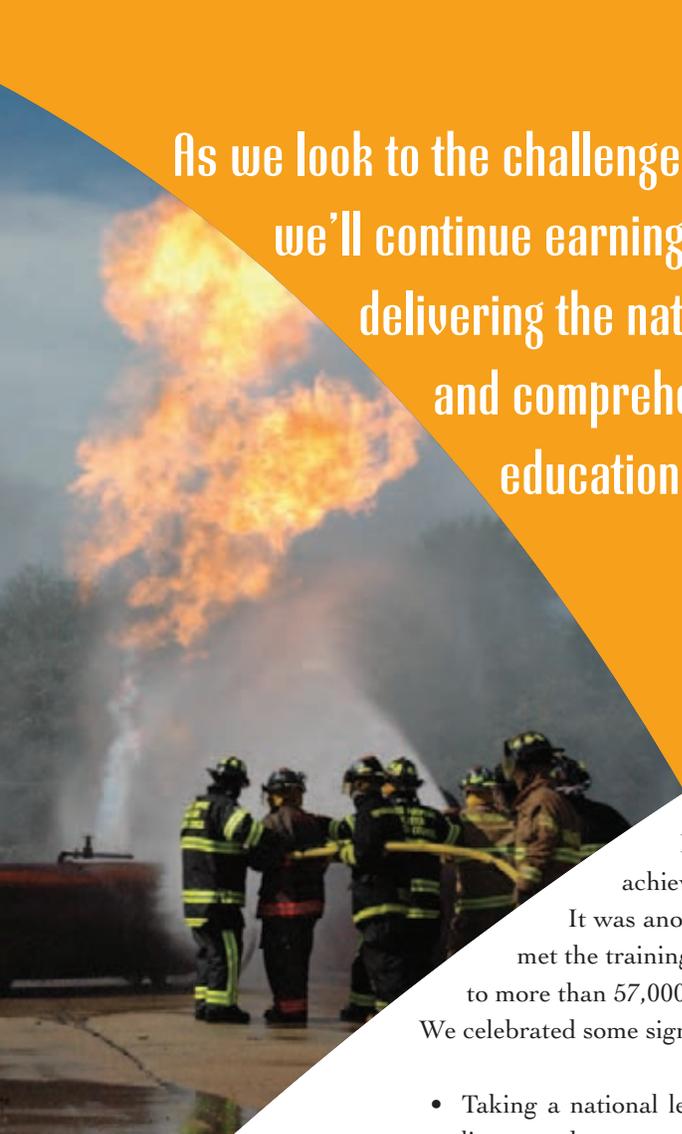


## OUR MISSION

To help firefighters do their work through training, education, information and research.

## ON OUR WATCH

July 1, 2007 to June 30, 2008



As we look to the challenges of the coming year,  
we'll continue earning your support by  
delivering the nation's most innovative  
and comprehensive fire-related training,  
education and research programs.

## From The Director

I am pleased to present the 2008 Annual Report of the Illinois Fire Service Institute at the University of Illinois. IFSI continues to build on its history of achievements, and the Institute is stronger today than at any time in its history.

It was another busy year and IFSI instructors and staff worked hard to ensure that we met the training, education and research needs of Illinois firefighters. Training was delivered to more than 57,000 students from all 102 Illinois counties.

We celebrated some significant accomplishments during the past year. They include:

- Taking a national leadership role in ethanol safety with a new and expanded training lineup and a comprehensive web site.
- Distributing the latest five-disk DVD training package on fireground support and aerial operations.
- Wrapping up the second stage of our research on the role of heat stress and PPE on firefighter fatalities and deaths.

You'll find details on these activities throughout this report.

We also celebrated several milestones in our work with the Illinois Terrorism Task Force training plan. We developed and enrolled the 8000th student in the state and national Unified Command Program and the 1500th student in the Advanced Command and General Staff Class.

In June, IFSI hosted four major events in Champaign: the 84th annual Fire College, the Explorer/Cadet Hands-On Training School, the statewide Technical Rescue Team Validation, and the HazMat Validation exercises. The 2008 Fire College, which is the oldest continuous annual fire college in the nation, offered 38 different courses to more than 800 students.

As we look to the challenges of the coming year, we'll continue earning your support by delivering the nation's most innovative and comprehensive fire-related training, education and research programs.



Richard Jaehne  
DIRECTOR



# From The Chancellor

It is an honor to have this opportunity to congratulate the Illinois Fire Service Institute on its 84th year of service to first responders and the people of Illinois.

The University of Illinois is proud to be home to the nationally recognized staff and state-of-the-art facilities that have made IFSI one of the premier fire institutes in the country. The University shares IFSI's focus on excellence in training, education, research and information, and we all benefit from our affiliation. In addition to sharing resources and expertise, our staffs collaborate on a wide range of interdisciplinary research and academic programs.

We join IFSI in celebrating the accomplishments of the past year and we look forward to supporting their innovative new programs to protect firefighters and citizens. Thank you to the Institute's staff, its partners and all its participants for your outstanding work.

Richard Herman  
CHANCELLOR  
UNIVERSITY OF ILLINOIS  
URBANA-CHAMPAIGN



# New In FY2008

## New Resources For Ethanol Emergencies

The growing market for ethanol and other alternative fuels has created a need for specialized training in handling emergencies related to its manufacturing and transport. IFSI responded with a curriculum of new courses and resources. They include:

- “Ethanol Awareness,” a new classroom and online course designed to provide a basic understanding of the emerging industry
- Two white papers were published and a web page dedicated to ethanol
- Public safety responder HazMat training under a U.S. Department of Transportation grant
- Production of “Quick Hit” videos available on the IFSI web site

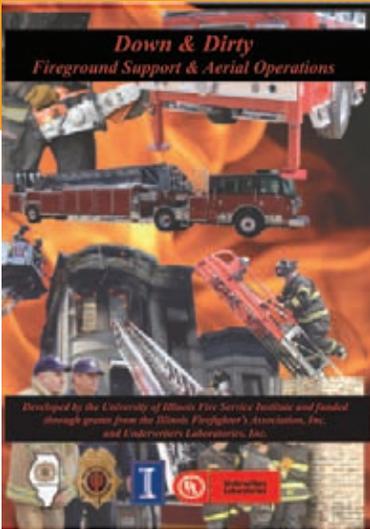
## Advances In Homeland Security Training

IFSI now offers 17 different nationally approved Department of Homeland Security (DHS) classes in hazardous materials, technical rescue and unified command. All of the DHS-approved Statewide WMD Response HAZMAT courses have been updated to the 2007 NFPA standard. Technical rescue training was added at Scott Air Force Base Regional Training Center near Belleville and an agreement was reached to add a Regional Training Center in Springfield.

## Additions To Cornerstone Regional Training

IFSI strengthened its field training by adding a seventh regional representative to assess area firefighters’ needs and interact with local departments. IFSI also updated its Cornerstone Essentials courses to standardize hands-on training in basic skills and is working on adding several new Cornerstone courses.





# Down & Dirty Fire Fighting Skills



“Fireground Support & Aerial Operations” is the fourth training package developed by IFSI, with funding from the Illinois Firefighter’s Association and Underwriter’s Lab. The most advanced training package to-date, the five-disk set was distributed to every fire department in Illinois. The package includes study guides and full-length detailed videos on fireground support tasks, such as forcible entry, orientation, search, rescue and ground ladders. The aerial operations portion of the package covers aerial types and terms, construction and elements of stabilization.

“*The regional reps and IFSI staff listen to the firefighters in the field, and we’re constantly working on new courses and formats to match their needs.*”

## Expanded Web Resources

A major redesign of the IFSI web site – [www.fsi.uiuc.edu](http://www.fsi.uiuc.edu) – provides firefighters and the public with enriched, interactive content on safety and security issues, plus full details on all IFSI courses and services.

RAY PALCZYNSKI  
NORTHWEST REGIONAL  
REPRESENTATIVE



# IFSI Training Courses

In FY2008, IFSI delivered **607,075** student hours of instruction. That included:

- 1281 different courses
- 21,287 class hours
- 57,279 student registrations from 999 fire departments and 153 other organizations
- 3,309 students in officer training courses, a 57% increase over 2007

FY2008 was the first year to engage students from all 102 Illinois counties.

## A World-Class Faculty

The IFSI faculty and field staff includes more than 400 of the top professionals in the country. These nationally recognized instructors build their years of experience and expertise into all of IFSI's classroom and hands-on training courses. Many are active duty firefighters and officers that bring the latest information from the fireground into the classroom and drill field.

## New This Year

- Six new courses and two seminars in ethanol training
- Expanded delivery of National Incident Management System (NIMS) courses

The IFSI web site ([www.fsi.uiuc.edu](http://www.fsi.uiuc.edu)) offers complete course descriptions and online registration. Visitors can browse the catalog and calendar, or use the online database to search for courses by date, location and content. Since 2000, IFSI has been an innovator in the design and delivery of online courses. Our online curriculum now includes six distance learning classes.

The Virtual Campus on the IFSI web site ([www.fsi.uiuc.edu](http://www.fsi.uiuc.edu)) is a central portal for accessing online course information, dynamic media, "Quick Hit" training videos, discussion boards and other interactive services.

## National Fire Academy

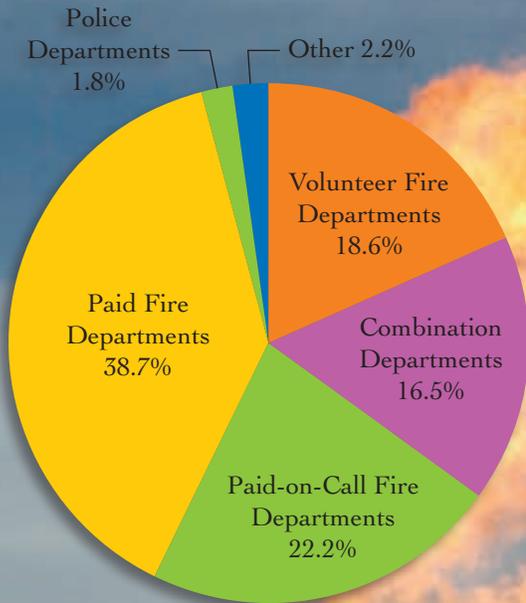
IFSI has built a strong relationship with the National Fire Academy (NFA) and works to give Illinois firefighters greater access to NFA classes. Many IFSI courses are NFA-endorsed, which qualifies students for dual certificates.



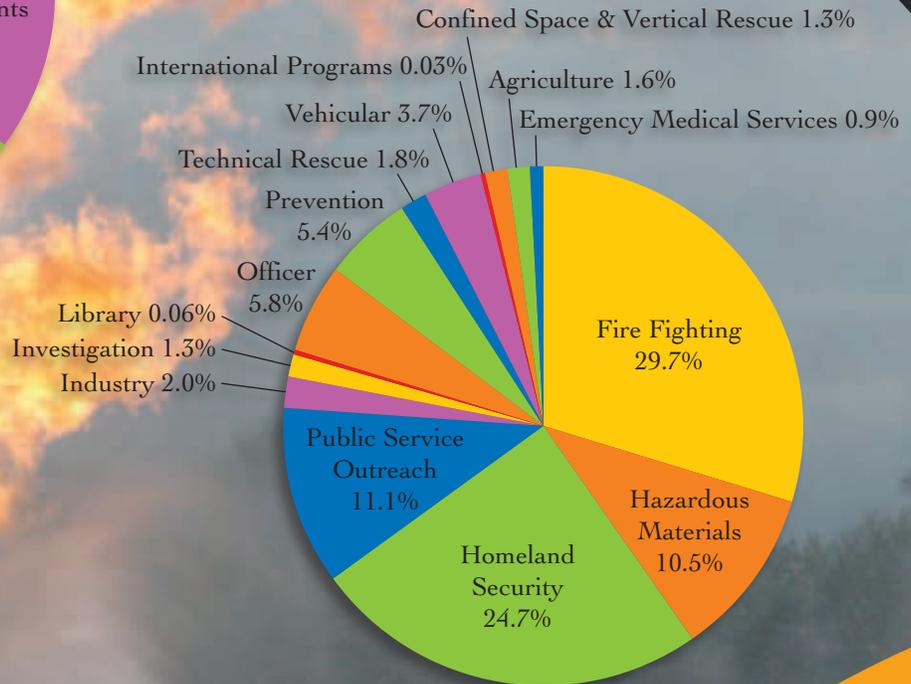
“As with any IFSI class, you guys never cease to provide a top-notch education and a safe learning environment.”

CHIEF, A CHAMPAIGN  
COUNTY FIRE DEPARTMENT

# Enrollment By Career Type



# Enrollment By Program Area



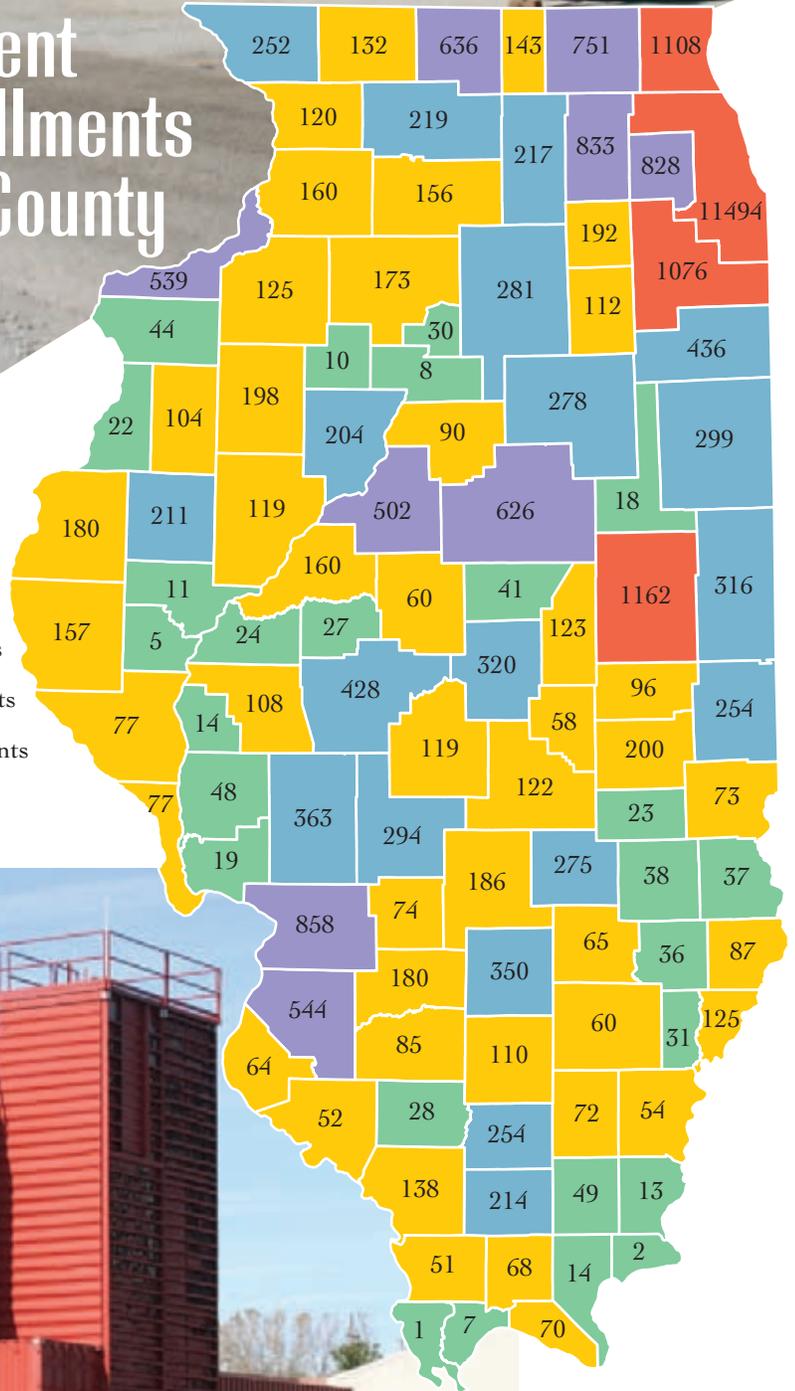
**“ Our outreach programs are stronger today than ever before. In 2008, almost 90% of all fire departments in Illinois participated in IFSI training. ”**

**DAVID CLARK**  
DEPUTY DIRECTOR

**IFSI had a presence in every Illinois county.**

# Student Enrollments Per County

- 0 – 50 students
- 51 – 200 students
- 201 – 500 students
- 501 – 1000 students
- 1001+ students



# Special Events

IFSI's legacy flagship event – the 84th Annual Fire College – brought more than 1000 firefighters to Champaign IL in June for America's oldest continuous fire school. The four-day event featured 37 different classes, featuring hands-on experience with the newest fire fighting equipment, technologies and techniques.

The 13th annual Winter Fire School offered a full weekend of training in January in Champaign IL. A total of 413 firefighters enrolled in short courses and NFA classes focused on training needs for small and volunteer fire departments.

The 4th Annual Fire Factor event was offered twice this year in partnership with University of Illinois Campus Housing and the cities of Champaign and Urbana. The full-day programs featured hands-on training for 119 University students to help them become fire safety leaders in residence halls and other campus housing.

The 5th annual Explorer-Cadet Hands-On Training Fire School in June offered youth participants the opportunity to work live evolutions in a wide range of skill areas, from hose and ladder work to structural fire fighting and rescue in IFSI's live-burn facilities. The 359 students, ages 14 to 21, represented 45 fire departments from eight states and Canada.



“ On a recent call, I was in an upstairs room with fire above and below me, no window and no way out. Thanks to the demonstrations in the Core Competencies class, though, I was able to successfully break through the wall and get out. Thank you! ”

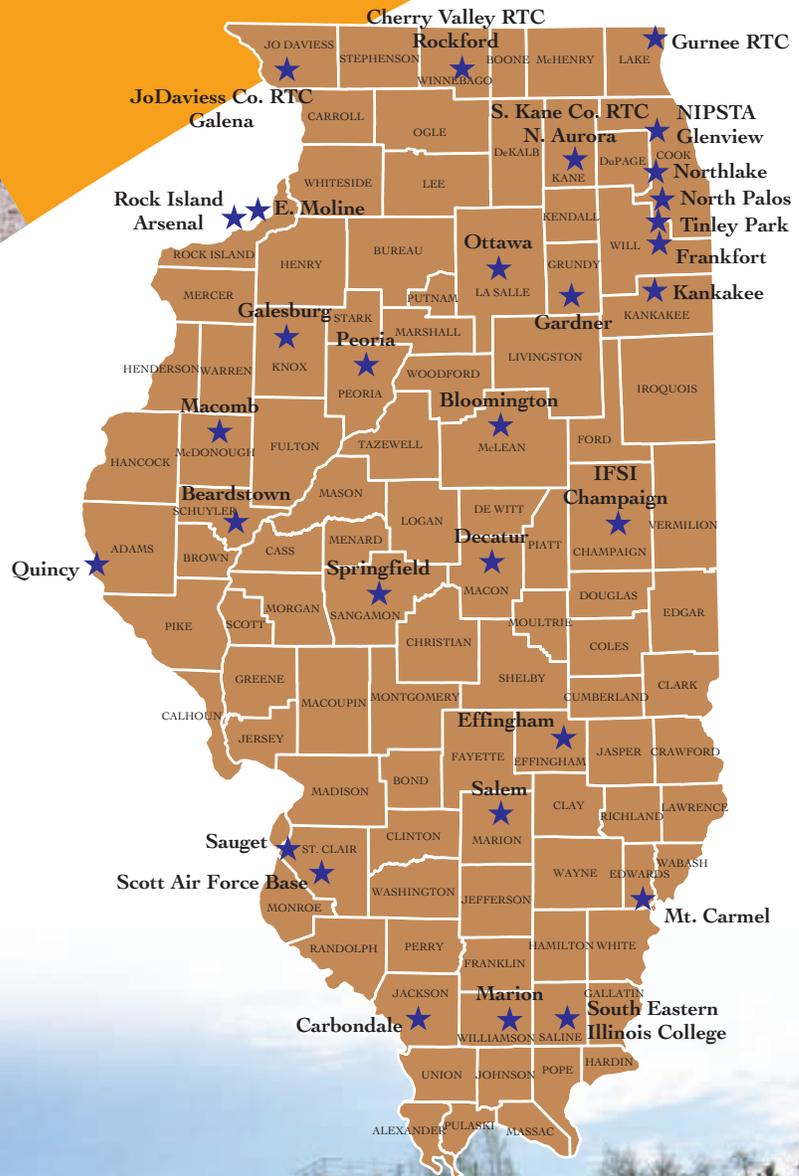
2008 FIRE COLLEGE STUDENT



# Outreach And Field Training

## Regional Training Centers

Our network of Regional Training Centers is designed to connect with all the state's firefighters and enable them to receive quality training close to their home departments. Facilities at the Centers range from burn structures to rescue and HazMat training props that are funded by the Illinois Terrorism Task Force. Many of the props have multiple uses.



### STUDENT REGISTRATIONS

More than 83 percent of IFSI training is delivered at Regional Training Centers and local departments throughout the state.





# Cornerstone Program

This outreach program offers practical, hands-on training in fundamental skills, delivered at no cost to trainees. Cornerstone courses are presented throughout the state

in fire departments' local facilities and at IFSI's regional training centers and fire schools.

IFSI now has seven regional representatives who connect with departments in their areas and work to ensure that all Illinois fire-fighters have access to local training. In FY2008, IFSI delivered Cornerstone classes to firefighters from all of Illinois' 102 counties.

These programs are made possible by support from our partners: Office of the State Fire Marshal, Illinois Propane Education and Research Council (IPERC), Illinois Petroleum Resources Board and the Illinois Department of Natural Resources (IDNR).

## Answering the Call

IFSI staff maintain a full calendar of scheduled courses and exercises, but they're always ready to respond to emergency training needs. Their work has made an impact at the state, national and international levels:

- When the California National Guard was summoned to help fight raging wildfires in California, seven members of the IFSI staff volunteered, too. Each spent one to two weeks there helping the California Department of Forestry train more than 1000 Guardsmen in wildland fire fighting.
- IFSI led an interdisciplinary team that played a critical advisory role for disaster-response operations after China's Wenchuan Earthquake in May 2008.
- Several Incident Management Teams (IMTs) trained by IFSI were deployed to area command centers and the State Emergency Operations Center during the 2008 flooding along the Mississippi River.
- Some of the same IMTs also assisted in the aftermath of the shootings at Northern Illinois University in DeKalb.

**CORNERSTONE DELIVERY**  
 402 classes  
 176 locations in 97 Illinois counties  
 774 departments  
 9368 students

**IPERC TRAINING**  
 83 classes  
 396 departments  
 2786 students

**IDNR WILDLANDS CLASSES**  
 8 classes  
 36 departments  
 152 students

**“ We were fortunate that all those in the command staff of this incident had been through IFSI's Grain Bin Rescue class. Without these individuals in place, I can only imagine what the outcome could have been. ”**

FILLMORE ILLINOIS FIRE PROTECTION DISTRICT, AFTER THE CREW SUCCESSFULLY EXTRICATED TWO MEN FROM A GRAIN-BIN ACCIDENT





# Illinois Terrorism Task Force (ITTF)



IFSI continued its work as co-chair of the ITTF Training Committee. In that role, we provide leadership in the development and delivery of interdisciplinary training for the state and nation. One of the special sessions was the Fifth Statewide Deployable Technical Rescue Team (TRT) Validation, hosted by IFSI in June 2008. The exercise, which tests response skills for a 33-hour period without external support, certified 162 team members for statewide disaster response.

Also featured was a HazMat Validation exercise, which certified 116 new team members. These validations involve the specialty teams and various support organizations, including the Illinois Medical Emergency Response Team (IMERT), the Incident Management Team (IMT) and the Red Cross.

## 2.5 MILLION INSTRUCTIONAL HOURS

In 2008, IFSI delivered 450 Homeland Security courses to 20,294 first responders in Illinois. Since the program began in 2000, the Illinois Terrorism Task Force (ITTF) Training Committee has provided 16,207 ITTF courses to 280,934 first responders – a total of more than 2.5 million student instructional hours.



# Partnerships and Public Engagement

IFSI's many strategic partnerships allow us to share knowledge and resources with leading educators, researchers, corporations, professional associations and other organizations. Current partners and their contributions include:

- **Illinois Firefighters Association** – funding and delivery of CD/DVD training software for use by local fire departments.
- **Illinois Association of Fire Protection Districts** – participation in trustee programs to promote training opportunities and availability.
- **Illinois Propane Education and Research Council (IPERC)** – delivery of no-cost training in fighting propane fires.
- **Illinois Petroleum Resources Board** – funding for training to extinguish oil well fires in southern Illinois.
- **Illinois Department of Natural Resources** – wildland (Red Card) fire training.
- **Illinois Emergency Management Agency** – delivery of HazMat, Ethanol and National Incident Management System (NIMS) classes on behalf of the agency.
- **Illinois Fire Chiefs Association** – continual update and delivery of professional fire officer training programs for career and volunteer departments.
- **University of Illinois at Urbana-Champaign** – cross-campus initiatives to fund interdisciplinary research and academic programs.
- **Office of the State Fire Marshal** – funding for the Cornerstone program and certification of firefighters.
- **Underwriters Laboratory** – joint sponsorship of fire-related research and product field trials.
- **Chicago Fire Department (CFD)** – projects in four key areas: training, education, research and translating “science to the street.” CFD is also a partner with IFSI in some of the Underwriters Laboratory projects.
- **Local #2 of the International Association of Firefighters (IAFF)** – delivery of HazMat Technician training to all Chicago firefighters. During FY2008, IFSI certified 678 Chicago firefighters as HazMat Technician A.
- **Des Plaines Fire Department** – donation of a ladder tower truck. IFSI now has a fleet of most types of fire fighting apparatus used by Illinois Departments.
- **Center for Public Safety Research at China's Tsinghua University** – exchange program for continuing development of national emergency management systems.



# A Commitment To Research



IFSI invests heavily in research to protect firefighters and advance the techniques and technologies available to them. Our efforts focus on action-oriented studies in:

- Health and wellness – studies on physical fitness, injury prevention and treatment, psychology, environmental issues and other factors that affect the safety of first responders.
- Incident management technology – projects to develop and evaluate new technologies for crisis situations.
- Tools and equipment – testing and development of tools, equipment and technologies for use in fire and rescue scenarios.

The Institute carries out this research through its membership in the Homeland Security Research Center and through strategic partnerships with other organizations, institutions and businesses. In addition to the University of Illinois, our research partners include fire departments, corporations, associations, private industry and other colleges and universities.

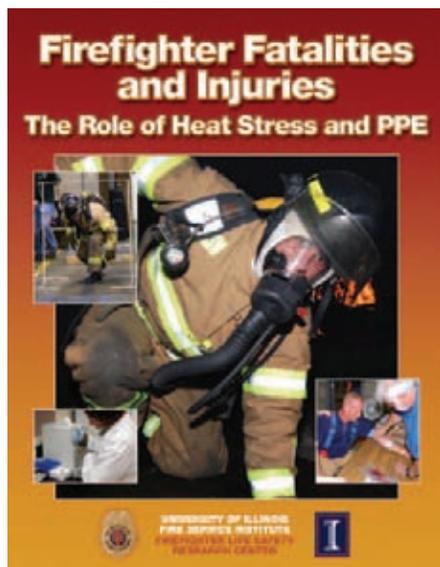
## Major Findings From The Life Safety Research Center

Since the 1980s, IFSI has studied the effects of heat stress on firefighters. For more than a year, IFSI's Firefighter Life Safety Research Center has been studying the effects of heat stress and its role in the most common line-of-duty fatalities (heart attacks) and injuries (trips, slips and falls). Researchers tested 122 firefighters for this latest project.

The result of their work is the publication *Firefighter Fatalities & Injuries: The Role of Heat Stress and Personal Protective Equipment (PPE)*. The report offers an overview of existing research and new findings from IFSI's studies on heat stress, cardiovascular function, balance and gait, and the design of protective equipment. The results have also been presented in programs for national fire service forums.

The research was made possible by two Fire Prevention & Safety grants from the Department of Homeland Security. The grants, awarded in 2007 and 2008, total \$1.8 million.

*Firefighter Fatalities & Injuries*: Read the full report online – <http://www.fsi.uiuc.edu> (on the "Research" page).



The complete report is available from the IFSI web site: [www.fsi.uiuc.edu](http://www.fsi.uiuc.edu).

# Cross-Campus Initiatives

IFSI's work is enhanced through our affiliation with one of the premier research universities in the nation. Institute staff members collaborate with University of Illinois professors and researchers from dozens of campus departments to carry out interdisciplinary studies.

IFSI is currently working with researchers from four University departments to study improved ways to prepare for, respond to and recover from extreme events. Funded by the National Science Foundation, the five-year project is investigating how new technologies can be used to link emergency responders with engineers and building managers.

## Other 2008 Accomplishments:

- IFSI completed testing on 21 firefighters for a NIOSH project that is evaluating different rehabilitation strategies.
- Industry grants from Cantimer Inc. and QUASAR are funding the testing of firefighter physiological monitoring systems and a handheld hydration monitor for use on the fireground.
- IFSI partnered with Underwriter Laboratories and the Chicago Fire Department for a series of projects that include live fire testing of building components.

**“The more we learn about the science of fire fighting, the safer we are. Saving lives is our number one research priority.”**

**GAVIN HORN**  
RESEARCH PROGRAM MANAGER



# Information Services

## IFSI Library



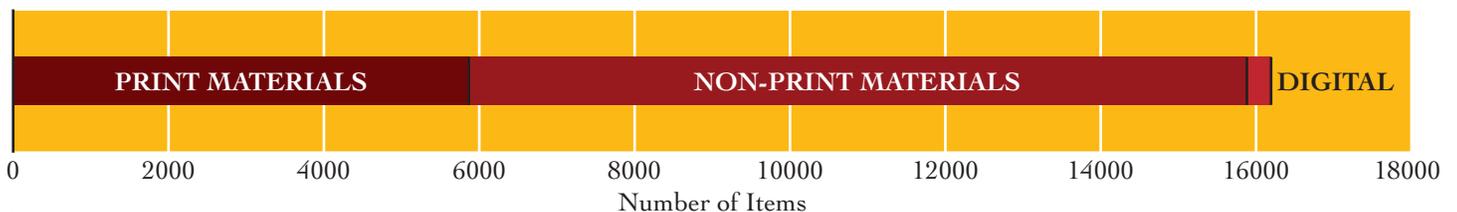
The **IFSI Library** offers extensive resources to Institute staff, Illinois fire departments and firefighters, and other emergency responders, as well as University of Illinois students and the public. It's the only library in the state dedicated to fire-service literature and research, and it's one of the top three fire service libraries in the U.S.

Through our **Library Outreach Program**, every firefighter in Illinois has access to free literature and information services. The entire library catalog is searchable on the Institute web site ([www.fsi.uiuc.edu](http://www.fsi.uiuc.edu)). A popular site feature is the **Virtual Bookshelf**, a constantly updated database of the most recent publications and research on dozens of different topics.

In FY2008, the IFSI Library

- Checked out 3532 items to library visitors
- Completed 5386 reference interactions
- Conducted 43 training workshops
- Welcomed 295 new users

## A GROWING COLLECTION OF MULTIMEDIA RESOURCES



# More Accomplishments In 2008

- The Library was awarded a state grant to develop the Illinois Online Disaster Preparedness Pathfinder, a new web service for the general public.
- The Library staff continued working on cooperative projects with Chinese-American librarians. Over the past four years, the IFSI Summer Program has successfully trained 66 librarians from Chinese universities.
- More additions were made to the Illinois Firefighter Line of Duty Deaths Database, a searchable, online collection that documents the ultimate sacrifice made by more than 800 Illinois firefighters since 1857. The database, which includes incident summaries and historical photographs, can be accessed on the Web: <http://www.fsi.uiuc.edu/content/library/IFLODD>



## Learning Resource And Research Center

Scheduled to break ground in 2009, the new **Learning Resource and Research Center** will be the home of an expanded IFSI library and a number of specialized facilities. In addition to the library, the 24,000-square-foot building will house research laboratories, an international conference center, computer classrooms, an emergency operations training center and the Firefighter Memorial Hall.



# Funding Sources



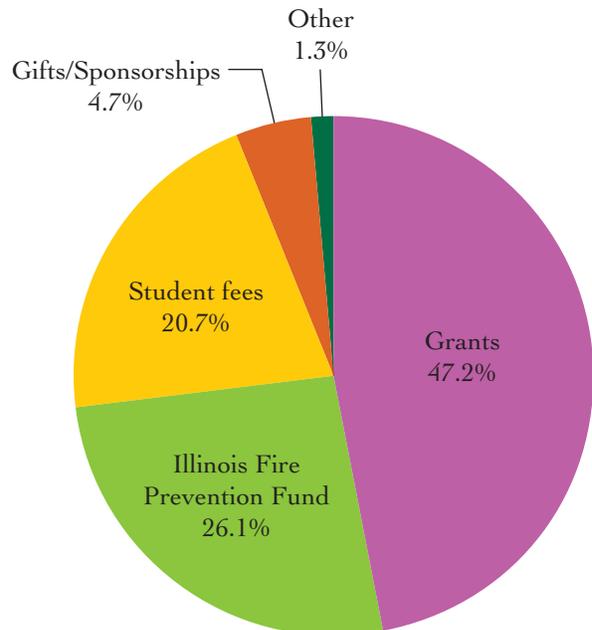
Hands-on training is the signature of IFSI, and it's a commitment that requires extensive resources. As our services and course enrollments increase, the need for additional funding becomes more critical. Our ability to respond to new fire fighting challenges depends on the continuing support of Illinois fire departments, state agencies and private donors.

- Mitsubishi Motors provided new and used cars for auto extrication classes.
- Caterpillar Tractor regularly supplies wooden pallets for burning.
- Specialized auto extrication tools are provided by Ajax Tools, Amkus, ARS, Genesis, Holmatro, Hurst, Power Hawk, Res-Q-Jack and Rescue 42.
- Task Force Tips provided foam nozzles and tools for fire fighting foam training.
- GROWMARK provided a custom-made trailer to assist with farm rescue training.

## PARTNER WITH IFSI

A contribution of just \$20 will provide more than one hour of training to an Illinois firefighter. IFSI takes pride in guaranteeing that 100 percent of every donation will be used to directly support firefighter training, education and research programs.

## FUNDING



# Looking ahead

The year ahead will present many opportunities and challenges, and IFSI staff is ready to meet them. We're looking forward to:

- Completing the new Learning Resource and Research Center and expanding its research and information services.
- Continuing our work with the ethanol industry to respond to its unique requirements for safety training.
- Developing more long-term corporate partnerships to strengthen our funding and build fire training and safety programs into industry work environments.
- Expanding our involvement in interdisciplinary research and incident-command operations.
- Developing additional courses on specialized topics requested by Illinois fire departments.

# Administration

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