

ON OUR WATCH



ANNUAL REPORT
JULY 1, 2021 – JUNE 30, 2022



ILLINOIS FIRE SERVICE INSTITUTE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

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A MESSAGE FROM THE DIRECTOR

It is my honor to present the 2022 Annual Report of the Illinois Fire Service Institute at the University of Illinois at Urbana-Champaign. Since assuming the role of Director on July 1, 2021, I have looked forward to writing this message as it is my opportunity to reflect on the many successes that we encountered in the past fiscal year.

In FY22, the Illinois Fire Service Institute (IFSI) proudly served first responders with top-quality training and education opportunities. Each IFSI program and course represents the best the nation has to offer. Despite the common difficulties and challenges we all faced during the COVID-19 pandemic, IFSI moved through FY22 with minimal impact on course deliveries and training opportunities. We saw an expected increase in student reach, serving 54,389 students, up 42% from the previous fiscal year. This number fell in line with pre-COVID standards, but still reflects that many departments and government agencies limited training due to staff shortages and budget cuts. Fortunately, we anticipate these numbers will continue to increase in upcoming years.

Our presence on the national stage also grew in FY22. IFSI was regularly featured in regional, state and national media outlets, to include; radio, television, podcast, social media, and national print media channels. Segment and post topics included special events, IFSI Research efforts, veterans support programs, new incident management training programs and resources, and IFSI technical rescue training opportunities. Additionally, members of the IFSI team successfully executed presentations and workshops at regional, state, national, and international conferences and symposiums. These highlights and educational opportunities are a reminder of our strengths, and challenge us to remain focused on expanding our impact in the upcoming year.

As I prepared this message, I also reflected on the daily positive impact we have on those we serve. Our accomplishments are consistent and frequent. I attribute our achievements to the hard work and dedication of the professionals who make up the team of IFSI staff and instructors. In FY22, we continued promotion of our **WE ARE IFSI** brand campaign to recognize the individuals who work passionately to support our mission. I urge you to stay connected with the IFSI social media platforms as we continue our commitment to showcasing our staff, programs, students and the further development of this brand.

Our programs are unmatched. Our partnerships remain strong. I look forward to the opportunities and challenges that we will embrace in the next year. Thank you for your support of the Illinois Fire Service Institute. It is my privilege to support our Mission.

**DIRECTOR
ILLINOIS FIRE SERVICE INSTITUTE**



FY 2022 BY THE NUMBERS:

58,638	<i>Total Reach*</i>
54,389	<i>Total Students</i>
1,478	<i>Courses Offered</i>
17,272	<i>Class Hours</i>
434,463	<i>Student Hours</i>
1,352	<i>Fire Departments Served</i>
102/102	<i>Illinois Counties Served</i>
318	<i>Unique Delivery Locations in Illinois</i>
906	<i>Students in Officer Training</i>

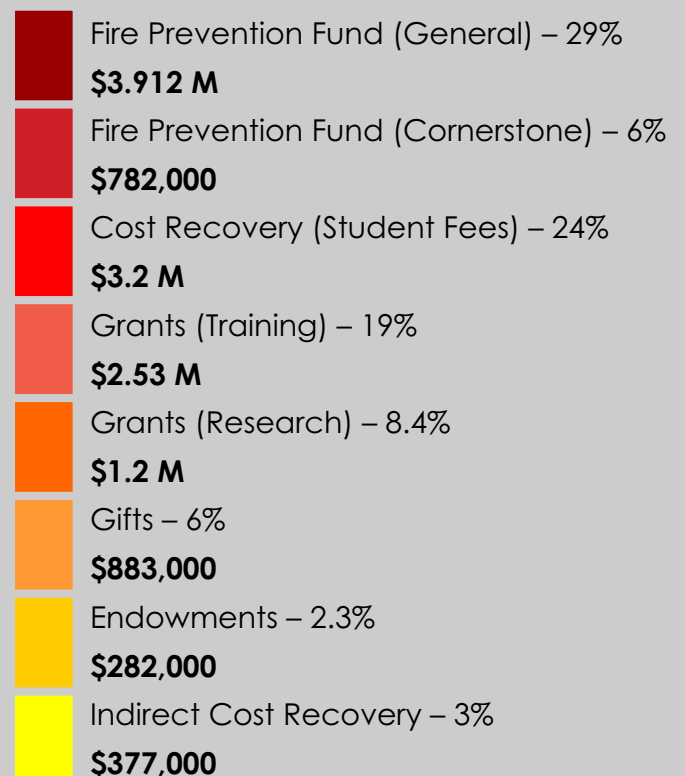
**Total reach includes outreach activities where individuals received training, education, or information from members of the IFSI Team, but were not registered for a specific class or training activity. Outreach activities include presentations, conferences, workshops, webinars, and national stage deliveries.*

The Illinois Fire Service Institute (IFSI) is the statutory State Fire Academy for Illinois. It serves as the oldest continuous fire training institution in the United States. Since 1925, first responders from across the state, the nation, and the world have relied on IFSI to deliver hands-on, innovative, and top-quality training, education, and research.

IFSI FUNDING SOURCES



TOTAL ANNUAL OPERATING BUDGET \$13,010,000



AFFILIATE SUPPORT

Our many strategic affiliations allow us to share knowledge and resources with leading educators, researchers, corporations, professional associations, and other organizations. In addition to those listed, we are grateful for the support received through fire service vendors and suppliers who contribute to fulfilling our mission.

IFSI AFFILIATES:

- Office of the Illinois State Fire Marshal
- Mutual Aid Box Alarm System
- Illinois Fire Chiefs Association
- Illinois Firefighters Association
- Illinois Association of Fire Protection Districts
- Associated Fire Fighters of Illinois
- Illinois Professional Firefighters Association
- Illinois Society of Fire Service Instructors
- Illinois Fire Safety Alliance
- Illinois Fire Inspectors Association
- Northern Illinois Alliance of Fire Protection Districts
- Illinois Chapter International Association of Arson Investigators
- State of Illinois Fire Caucus
- Underwriters Laboratory
- National Institute for Occupational Safety and Health
- Illinois Department of Natural Resources
- Illinois Propane Education and Research Council

IFSI RESEARCH PROGRAM

COMPLETED DATA COLLECTION:

Evaluation of SCBA design and weight on firefighters heart rate, core temperature, and functional balance: The research team conducted 40 trials involving a combination of Graded Treadmill Exercise tests and simulated firefighting visits consisting of functional balance tests with two bouts of simulated firefighting activities in an environmental chamber while wearing different weighted SCBA. This study examined whether the addition of 5 and 10lbs of weight to the SCBA would impact firefighter performance and perceptions. It was funded by the Centers for Disease Control and Prevention – National Personal Protective Technology Laboratory.

Thermal degradation of SCBA facepiece lenses under radiant thermal loads: Three models of SCBA facepiece lenses were exposed to radiant thermal loads until thermal degradation resulted in hole formation. Time to cracking, bubbling, and hole formation were recorded to characterize performance of lenses meeting NFPA 1981 2013 and 2007 editions. This project was conducted through a subaward from UL Research Institute's Fire Safety Research Institute through their project "Study of Firefighter Line of Duty Injuries and Near Misses" (DHS FEMA Assistance to Firefighter Grant EMW-2018-FP-00476).

Fire contamination removal: The research team exposed turnout gear samples in the Fire Exposure Simulator to examine the level of PAH contamination to the moisture barrier and the impact of laundering and delayed cleaning. This study addressed a gap in the existing research as most previous studies had focused on PAH contamination of the turnout's outer shell. This project was led and funded by W L Gore & Associates Inc., the manufacturer of the moisture barrier.

Effect of PFAS on Firefighters health: This project was a collaborative study between IFSI and Department of Bioengineering at UIUC, led by Dr. Joseph Irudayaraj, Professor of Bioengineering and Associate Director of Cancer Center at UIUC. The project was funded by UIUC Office of Research and focused on effects of PFAS on genetic and genomic biomarkers. Biological samples were obtained from non-firefighters, novice firefighters and experienced firefighters.

ONGOING DATA COLLECTION:

Nozzle Study: to study the nozzle reaction force exerted on a firefighter by a spraying nozzle with different attacking angles, nozzle size and types, and different diameters of supply hose.

Firefighter Cancer Cohort Study: As part of nationwide effort, IFSI partnered with the University of Miami, University of Arizona, the National Institute for Occupational Safety and Health (NIOSH) and Rutgers in this longitudinal study examining exposure risks and markers of chemical exposure from fire service instructors and volunteer firefighters. This study brought many researchers on-site to collect biological and exposure samples.



In FY2022, new collaborations include:

Improve the learning effectiveness of firefighting training through immersive 3D simulation with VR option to provide more realistic, instructionally effective environment on a variety of scenarios. This project is led by the National Center for Supercomputing Applications (NCSA) and funded by the National Fire Protection Association (NFPA) through its affiliate the Fire Protection Research Foundation.

Field Deployable Kit for Removal of Aromatic Hydrocarbon and Heavy Metal Contaminants from Firefighter Turnout Gear. This project is led by Physical Sciences Inc and funded by the Department of Defense with the ultimate goal of developing an improved detergent for preliminary exposure reduction of firefighting turnout gear.

IFSI Outreach and Engagement

- Presented on "Firefighters Health and Safety Research: Reducing Chemical Exposure and Cardiovascular Events" at five unique fire service and professional development conferences.
- Presented a recent study, "Particulate Blocking Hoods: Range of Motion, Hearing, and Noise Production" focusing on the pros and cons of particulate blocking hoods, examining blocking effectiveness, heat stress, hearing, and range of motion at the FIERO PPE Conference in South Carolina.
- Sponsored a student project for the Department of Mechanical Science and Engineering Senior Design Team. The project for the semester focuses on designing a method and a device for cleaning firefighter gloves post exposure.
- Presented Common Sense Exposure Reduction Techniques based on the series of research tests conducted over the last several years at IFSI at the Fire Department Safety Officers Association Health and Safety Conference.
- Participated in the 2022 Engineering Open House demonstrating fire safety and showcasing current research projects to approximately 1000 students and community members.
- Published many articles in high impact academic journals such as the International Journal of Environmental Research and Public Health, Fire Safety Journal, and Fire Technology including the "Impact of Repeated Exposure and Cleaning on Protective Properties of Structural Firefighting Turnout Gear" manuscript published in Fire Technology, selected as one of the best papers of the year and included in their Topical Collection for Editors' Choice.

*List of publications can be found at
fsi.illinois.edu/research/publications*

INTERNATIONAL PROGRAM HIGHLIGHTS

The Library's International Outreach Services have built a global community of **825** individuals from **207** organizations. IFSI International Programs Team answered **2,254** international requests in FY2022. Since April 2020, the International Programs has organized **55** lecture series on LIS, fire safety, Chinese arts, and visiting scholars' research via Zoom with **3,485** participants throughout the world.

Despite Covid-19 putting the International Program on hold for two years, **9** visiting scholars arrived to Urbana-Champaign in FY2022. This included one firefighter from South Korea.

- Since 2005, the Chinese Librarian Scholarly Exchange Program (CLSEP) has received **423** librarians (2005-2019) from **145** organizations.
- Since 2008, the IFSI Visiting Scholar Program has hosted **154** scholars from **85** institutions in China, Brazil, South Korea, and the Netherlands.

The IFSI International Program Team actively engages with research projects, publications, and presentations. FY2022 publications and presentations included:

- "Children's Fire Safety Literacy Reading and Discussion Program Initiatives at the Illinois Fire Service Institute Library" at the 2022 Shanghai International Forum.
- "Illinois Fire Service Institute Library Initiatives During the Covid-19 Pandemic" in the International Journal of Librarianship Special Issue on the Pandemic and Libraries CALA issue.
- Keynote speech "Training Firefighters in the United States" at the 2nd International Symposium on Public Security and Global Governance hosted online by Jinan University.
- "Libraries adapting to the Covid World: The Illinois Fire Service Institute Library Practice" at the American Library Association International Relations Round Table Pre-Conference.

LIBRARY

The IFSI Library is the only library in the state dedicated to fire and emergency services and is the third largest fire and emergency services library in the United States. The IFSI Library team of professionals and iSchool graduate students provides services in the key areas of reference, circulation, and interlibrary loan.

FY2022 ACCOMPLISHMENTS AND HIGHLIGHTS

In FY2022, the Library received two national level grants. Through the Institute of Museum and Library Services American Rescue Plan, the library received **\$50,000** in funding for the *Experience-Based Knowledge Management Initiatives to Support Illinois Firefighters' Dynamic Needs in Response to the Covid-19 Pandemic*. From the American Library Association through the National Endowment for the Humanities American Rescue Plan: Humanities Grantmaking, the library received **\$10,000** for the *Children's Fire Safety Literacy Reading and Discussion Program*.

- 488 items were added to the collection, including 294 general donations of which 70 were from Fire Engineering.
- 2,975 items were loaned, including 330 interlibrary loans.
- The Library's online subject guides (LibGuides) were viewed 25,997 times with four new guides added: Children's Fire Safety, Fire Safety for Disabled People, Grants for Fire Departments, and Technology in the Fire Service.
- 43 user training workshops were delivered to 449 patrons
- 3,040 training and outreach emails were sent to 380 Illinois fire departments.

The IFSI Archives worked with the Illinois Digital Environment for Access to Learning and Scholarship to make IFSI documents widely available. Completed a project to digitize and upload all historical IFSI Newsletters to IDEALS, the Institutional Repository of the University of Illinois; and worked with the Springfield Fire Department to digitize 153 images from 35mm slides and make them available on the State Library's Illinois Digital Archives.

OPERATIONAL ACHIEVEMENTS

Achievements in key areas include a record high **7,558** reference requests even during the Covid-19 pandemic, an increase from 5,511 in FY21.

- 2,291 from Illinois firefighters and fire departments
- 1,616 from IFSI instructors, staff and students
- 287 UIUC staff and students
- 117 from the IFSI Curriculum Department

The IFSI Library maintains the Illinois Firefighter Medal of Honor and Medal of Valor Database and the Illinois Firefighter Line of Duty Death Database (IFLODD). As of May 2007, IFLODD has received **151,339** database hits and holds **912** firefighter records, including **818** firefighters with incident summaries, and **1,537** images and 14 total oral history interviews (as of 6/2021). In FY2022, the Library had **5,940** reference interactions related to the IFSI Archives.



PROGRAM STATS

737 CLASSES DELIVERED	2,709 DEPARTMENTS SERVED	14,276 STUDENTS REACHED
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The Cornerstone Program supports the delivery of essential skills training to local fire departments, MABAS Divisions and Mutual Aid Associations throughout the state.

Training is coordinated through eight IFSI Regional Representatives. Courses are funded through the Office of the Illinois State Fire Marshal and available at no cost to students or fire departments. **Of the 916 Illinois fire departments served in 2021, 824 of those departments received grant funded Cornerstone training.**

DELIVERY BY REGION

Region	Classes	Students	Student Hours
Northeast	72	2,064	9,265
Cook County	74	1,388	11,210
North Central	77	1,634	12,074
Northwest	33	684	3,840
Central	127	2,064	9,500
East Central*	112	2,198	13,944
Southwest	167	2,622	12,654
Southern	58	957	5,996
Other**	17	1,398	7,129
TOTAL	737	14,276	85,612

*Includes Champaign Light and Fight courses.
**These deliveries supported multiple regions.

CURRICULUM

The Illinois Fire Service Institute continues to offer the highest quality in training and education. Evaluation methods were audited and reviewed once again this year through a third-party process. IFSI has maintained accreditation with the National Board on Fire Service Professional Qualifications (Pro Board) and International Fire Service Accreditation Congress (IFSAC). IFSI continued to expand national certification opportunities for our students.



FY22 Update:

- The Curriculum Office supported the update of **31** existing courses and the development of **12** new courses.
- IFSI currently delivers **102** courses that award EMS Continuing Education Units (CEUs).

Two new courses were added in 2022: Alternative Fuel Vehicle and Opioid Awareness.

Fire Inspector I and Fire Inspector II are now blended online and in-person courses.

Testing:

- **34** Pro Board and **14** IFSAC approved levels (addition of ConSpace Ops, Fire Officer I and the Mission Specific Hazmat Chapters – PPE and Product Control)
- **9** Test Bank validations
- Several successful pilots of Computer Based Testing (CBT) – with the goal to offer the CBT testing option for all onsite deliveries by 1/1/2023.
- Maintained, created and verified reliability/validity of the **41** exams which hold National Certification.
- IFSI issued **3,405** Pro Board certifications and **837** IFSAC certifications to students.
- Total of **6,186** exams scored



FIREFIGHTING PROGRAMS

The IFSI Firefighting Program offers hands-on training opportunities for first responders. Courses provide students with a realistic learning experience.

FIREFIGHTING PROGRAMS SUMMARY

	# Students	# Hours
Advanced Breathing Apparatus Specialist	147	2,064
Advanced Technician Firefighter / NFPA FF II	64	2,140
Basic Firefighter / NFPA FF I Academy	96	35,520
Basic Operations Firefighter / NFPA FF I Blended	437	88,567
Basic Firefighter / NFPA FF I Online (Mods A, B, C)	172	12,185
Driver/Operator Courses	3,022	19,510
Engine Company Operations	503	3,876
Fireground Command Officer School	39	1,080
Fireground Company Officer School	83	3,312
General Firefighting Courses	6,396	176,211
Industrial Firefighting	1,798	1,384
Investigation	508	5,941
Oil and Gas	1,526	5,467
Prevention	382	3,943
Truck Company Operations	55	992
Wildland Firefighting	445	7,640
TOTALS	15,673	369,832

SPECIAL OPERATIONS TRAINING PROGRAM

The Illinois Fire Service Institute Special Operations Training Program (SOTP) delivers technical rescue awareness and hazardous materials training to first responders. Courses offer immersive training experiences that challenge even the most experienced students. IFSI SOTP is at the national forefront of technical rescue awareness and hazardous material training programs.

SPECIAL OPERATIONS TRAINING PROGRAMS SUMMARY

	# Students	# Hours
AGRICULTURE	465	2,823
CONFINED SPACE	173	6,974
HAZARDOUS MATERIALS	6,470	41,965
RESPONDER INTERVENTION TEAM (RIT)	668	4,212
ROPE RESCUE	381	11,874
STRUCTURAL COLLAPSE	270	8,123
TRENCH RESCUE	111	3,544
VEHICULAR RESCUE	1,530	25,212
TOTALS	10,068	104,727

LEADERSHIP AND COMMAND PROGRAMS

NATIONAL INCIDENT MANAGEMENT SYSTEM

The National Incident Management (NIMS) Program offers training in incident management to response organizations throughout the State of Illinois.

1,661 Students **85 Classes** **28,640 Hours**

LEADERSHIP DEVELOPMENT & DECISION MAKING

The Leadership Development and Decision Making (LDDM) Program offers premier development/decision-making training and education courses that have consistent themes, priorities, and lines of education in order to institutionalize the highest-quality leadership in the fire service.

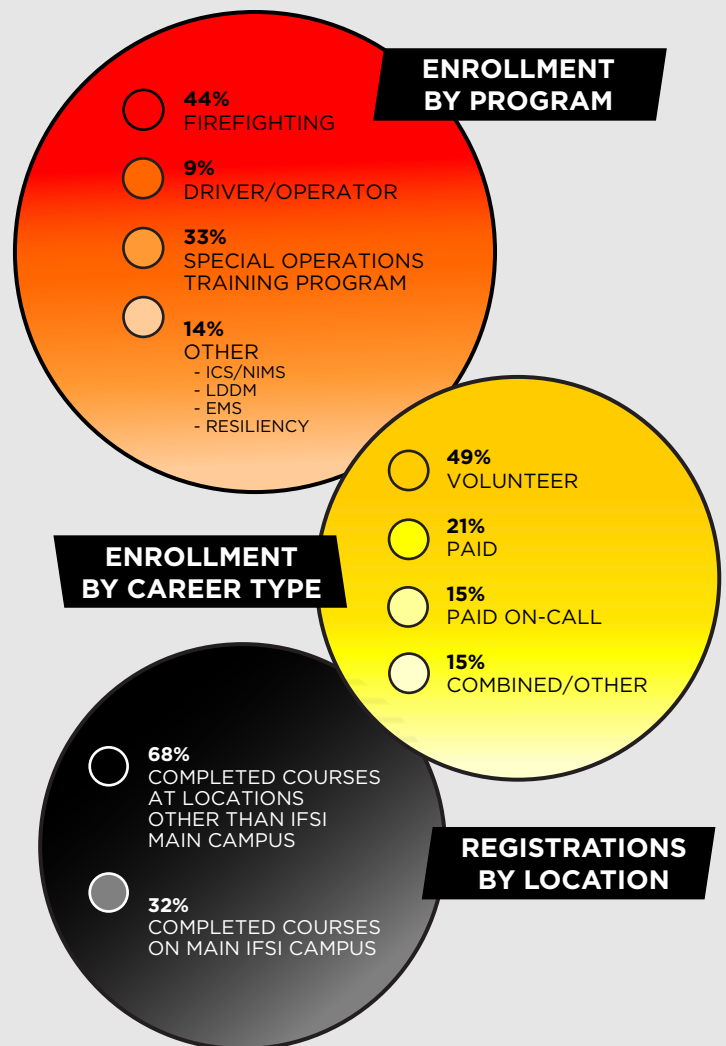
166 Students **17 Classes** **4,124 Hours**

RESILIENCY PROJECT

Resiliency training provides first responders with the necessary tools to remain resilient to the stressors that come with the job as well as stress from off the job. Resiliency training is infused in the curriculum of multiple IFSI courses, and also available as a stand alone delivery.

319 Students **23 Classes** **1,201 Hours**

STATS AT A GLANCE



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Our Mission:
**Helping Firefighters Do Their Work Through
Training, Education, Information, and Research.**

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