Greetings from your State Fire Academy on the dawn of the new millennium. Because of you, our goal of designing and implementing a strategic plan for the 21st century is well underway. Here are just a few of the milestones we have already achieved together:

✓ We celebrated the 75th anniversary of our nation's oldest fire college
✓ We designed, built and placed into operations 5 regional training centers
✓ We trained over 3100 firefighters from 447 departments with over 34,000 student hours of basic hands-on skills, at no cost to you, using reimbursable fund monies provided by the State Fire Marshal and Reimbursable Task Force.
✓ Your response to the FSI library survey has helped make us a member of the state library system and to offer lending and information services to you as Illinois's only library dedicated exclusively to fire science.
✓ Low-cost, short-courses in firefighter specialty skills have been designed for delivery to departments locally.
✓ We have created a web site to provide you direct access to FSI anytime.

Our goal is to continue to develop and expand the Vision to ensure that FSI is relevant to your needs. We are expanding the vision to specifically include programs tailored to the specific needs of career fire service, as well as the volunteer fire service. We seek your input on what specific programs should be included in each of these "pillars."

Last November, I was personally privileged to co-host a Volunteer Fire Service Summit with State Fire Marshal Tom Armstead. The Summit was the first such state summit ever held and it brought together the leadership of the Illinois fire service, with key leaders from local and state government, business and education. Lieutenant Governor Corinne Wood and Chief John Buckman, from the International Fire Chiefs' Association, provided important thoughts, which you can hear as they were delivered by visiting the Summit web site at:

http://otel.uis.edu/summit

The web site also provides issue papers, a web board for your input and discussion, and a copy of important documents, such as the National Volunteer Fire Service Summit Report. The results of the Summit will be provided to Governor Ryan's Blue Ribbon Committee on the Fire Service and be made available on the web site.
NEWSLETTER
The Illinois Fire Service Institute
Newsletter

Director
Richard L. Jaehne

Associate Director for Administration & Research
James B. Straseske

Associate Director of Academic Affairs
David F. Clark

Editor
Virginia Stahl

The Illinois Fire Service Institute Newsletter is the official publication of the Illinois Fire Service Institute, University of Illinois. The Newsletter is published three times per year and solely an educational and advisory aid to the fire service and individuals working to establish and maintain a fire safe environment in Illinois. Opinions expressed in the Illinois Fire Service Institute Newsletter are those of the authors and do not necessarily represent the official opinions of the Illinois Fire Service Institute unless otherwise noted in the article.

The Illinois Fire Service Institute will consider for publication articles or items of interest to the fire service of Illinois and encourages materials from all fire-related professions for consideration.

Persons interested in furnishing material should forward it to: The FSI Newsletter 11 Gerty Dr. Champaign, IL 61820

Materials may be reproduced or republished provided credit is given to source and author.

The University of Illinois is an affirmative action, equal opportunity institution.

TABLE OF CONTENTS
From the Director's Desk .......... 1
News and Notes .................. 2
Illinois Volunteer Fire Service Summit .......... 3
Expanded Reimbursable Classes .......... 3
FSI Library Update ................ 4
Workshop for FTI .................. 4
National Training Update .......... 5
Regional Training Centers .......... 6
Control of High Pressure Fires 8
Hydraulic Systems Warning .......... 8
FSI Announces Retirement of Virginia Stahl .......... 9
A Fond Farewell ................... 9
E-ColI: 01 57H7, EMS, and You 10
Fire Photography .................. 11
The Use of Power Bases in the Fire Service .......... 12
Fire/Arson Investigation .......... 13
Rescue Corner .................... 13-14
Staff Information ................ 15

NEWS AND NOTES
David F. Clark, Associate Director for Academic Affairs

FY-2000 is off to a flying start. The Reimbursable program is very active, and we are working through partnerships, special scheduling, and other means to make our other classes more available. I suggest you sign up now for classes that interest you so you don’t miss out.

We recently completed our first EMT class. This was presented in a 3-week format, and was well received. The next one will follow the spring Academy. Contact Brad Bone about all of our EMS classes.

The Beardstown RTC is now available for use. Contact the host Beardstown FD to arrange for a Train-the-Trainer on the facility, and to schedule the site for your own department’s training. There is no cost for this.

The Beardstown RTC is now available for use. Contact the host Beardstown FD to arrange for a Train-the-Trainer on the facility, and to schedule the site for your own department’s training. There is no cost for this. (The same is true of the other RTCs.) See our web site www.uiuc.edu/unit/lFSI

I am collecting the name, date, month, and year of death, and department of all Illinois firefighters who have ever died in the line of duty. These will be placed in a memorial book in the entrance hall of FSI. Please send this information about any members of your department who have died in the line of duty so they can be appropriately recognized.

We are moving toward our goal to have the classroom portions of CFF-II available this spring via Internet. This can be coupled with Essentials I-IV and a house/tower burn to prepare to take the CFF-II exam.

Our next calendar is in the mail. Class dates are available on the web.

The recent Volunteer Summit was an important success. Ideas and cooperation were generated, and we will build on that, and it will feed into the Governor’s Blue Ribbon Panel on the fire service. The Summit’s interactive web site, http://otel.usi.edu/summit, will be operating for the next year so you can review what happened, and provide your input. Please take time to check it out. The work of the Summit will be an ongoing effort.

IFSI is adding another pillar to our Vision. It will focus on the needs of the career fire service. If you have ideas and suggestions of how we can better serve these needs, please let us know.

Over the past years, there have been periodic complaints from the fire service about why can’t IFSI and the OSFM work more in sync with each other. I can tell you that both organizations are now working together to attempt to make the certification process more user friendly. It will take time, but we are trying.

When I talk with firefighters from other states, they are envious of the facilities and opportunities that you have available through IFSI. Make use of them. Don’t wait. Sign up now for Winter Fire School and other classes!
ILLINOIS VOLUNTEER FIRE SERVICE SUMMIT

On 9 and 10 November 1999, the Illinois State Fire Marshal and the Director of the State Fire Academy (University of Illinois Fire Service Institute) co-hosted a Volunteer Fire Service Summit at the Public Affairs Center of the University of Illinois Springfield campus.

The Summit brought into focus issues that affect some 30,000 volunteer firefighters throughout Illinois, each of whom is a potential student of the Fire Service Institute, which is the statutory State Fire Academy. The Summit represented a significant demonstration of the Public Service mission of the University of Illinois by including the Champaign-Urbana and Springfield campuses, as well University-level outreach offices. In fulfillment of the University's commitment to create education partnerships, the Summit created partnerships with the State Community College Board and Community/Junior colleges throughout the State.

The central impact of the Summit was to create the feeling among the participants that together "we can".

✓ Can create communications between these groups
✓ Can develop a set of common issues
✓ Can agree on a set of near-term goals and objectives
✓ Can improve the ability of the volunteer fire service in Illinois to protect our communities

A follow-up local summit has already been scheduled for February 2000 by the City of Belvidere, whose Mayor and Fire Chief participated in the Summit.

The Summit included 216 representatives of the five critical groups who must work together to create and sustain the volunteer fire service in communities throughout Illinois. These groups included firefighters and fire service leaders, mayors, city managers, 6 separate State government agencies, business leaders representing local and Fortune 500 corporations, and community/junior colleges. This was also the nation's first State-level Summit built upon the National Fire Service Summit and as such is considered a template for other states. Federal Emergency Management Agency (FEMA) Director Witt, the National Fire Academy, the North American Fire Training Directors and the National Volunteer Fire Council have all asked to be kept informed of the Summit results.

REIMBURSABLE CLASSES AVAILABLE (No cost to department)

<table>
<thead>
<tr>
<th>Course</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essentials – I (Core Competencies)</td>
<td>15 hr.</td>
</tr>
<tr>
<td>Essentials – II</td>
<td>15 hr.</td>
</tr>
<tr>
<td>Essentials – III</td>
<td>15 hr.</td>
</tr>
<tr>
<td>Essentials – IV</td>
<td>12 hr.</td>
</tr>
<tr>
<td>House Burn</td>
<td>8 hr.</td>
</tr>
<tr>
<td>Live Burn (FSI, RTC, local)</td>
<td>8 hr.</td>
</tr>
<tr>
<td>LP Burn</td>
<td>4 hr.    (Host dept. supplies LP)</td>
</tr>
<tr>
<td>Basic Pumps</td>
<td>4-12 hr.</td>
</tr>
<tr>
<td>Down &amp; Dirty Hydraulics</td>
<td>8 hr.</td>
</tr>
<tr>
<td>Rural Water Supply</td>
<td>8-16 hr.</td>
</tr>
<tr>
<td>Origin &amp; Cause Awareness</td>
<td>8 hr.</td>
</tr>
<tr>
<td>Basic Company Officer Trng.</td>
<td>8-16 hr.</td>
</tr>
<tr>
<td>Customized BASIC Training</td>
<td>3-8 hr.  (We'll consider on case-by-case basis)</td>
</tr>
<tr>
<td>Saving Our Own</td>
<td>8-16 hr. (RTCs, &amp; Regional case by case)</td>
</tr>
</tbody>
</table>
FSI LIBRARY UPDATE
Lion Ruan, Head Librarian

Grant Applications Submitted to the Illinois State Library - Several grant applications were submitted to the Illinois State Library in August, September, and October 1999, respectively. The LSTA (Library Services and Technology Act) Full Year Grant Proposal, entitled, "Internet Outreach to & Training of Illinois Fire Service Personnel, Public and Community College Librarians for Electronic Access to Fire Safety Information" is in the final stage for approval by the Secretary of State's Office, in December 1999.

$500 Cash to the Library Donated by the Beach Park Fire & Rescue Association - This donation was deposited at the University Foundation and will be used for purchasing library materials for local fire department training. We thank the Beach Park Fire & Rescue Association for their generous support.

Internet Access to FSI Library - The FSI Library Catalog is on the Internet! Go to: http://www.uiuc.edu/unit/FSI. Click on the Library and click on Online Public Access Catalog (OPAC). Click on search the Library Catalog. You'll find useful information a fingertip away. We are improving the Library Web Home Page. Let's hear from you with your suggestions, comments and ideas.

Mini-Grant Consulting Project - Professor Pauline Cochrane, from the University's Graduate School of Library and Information Science, and I started the "Bring in an Expert" mini-grant consulting project on August 27. The project lasted 13 days. The scope of the project is: (a) Evaluate the subject access in the FSI Library collection; (b) Map relevant MeSH (Medical Subject Headings from the National Library of Medicine), LCSH (Library Congress Subject Headings), and other vocabulary terms to FSI Thesaurus file; and (c) train FSI Library staff to maintain vocabulary control in the Library Online Public Access (OPAC) with better entry vocabulary based on user analyses. The Illinois State Library awarded us the mini-grant in July 1999. We'll publish an article about the Project soon. We have also developed the project idea to a printed, as well as web-based, electronic thesaurus, and will make the thesaurus available to all of our users.

The FSI Library Catalog is on the Internet! Go to:
http://www.uiuc.edu/unit/FSI

Library Committee Meeting, October 13, 1999 - With the help of the Effingham Fire Department, the FSI Library Committee meeting was held at the Effingham City Hall on October 13, 1999, 10:00 am - 12:00 pm. There was discussion regarding ways to get more involvement in Southern Illinois. The following Suggestions were made: (1) conduct library presentations/workshops at fire associations' meetings, conferences, and regional training centers, (2) mail the library brochure to individual firefighters, in addition to the fire departments, and (3) mail the library brochure with other mailings sent by the regional training centers. The next item of discussion was the FSI Library Building Fund Drive. The Building Fund Drive is under preparation. We have already established a FSI Library account with the University Foundation to accept donations directly from the public. We will follow up with those respondents of the FSI Library Outreach Program Survey who showed interest of financial contribution. Also, we will explore other opportunities with Corporate America, foundations and etc.

Library Presentation at Illinois Fire Service Instructor Conference, September 23, 1999 - I wish to express my thanks for the invitation from the Society of Illinois Fire Service Instructors to speak at their conference. I presented a one-hour library presentation at the Annual Conference and received positive feedback.

inFIRE Committee Meeting, November 6-9, 1999, Norwood, Massachusetts - I attended the inFIRE Committee Meeting on November 6-9, 1999, at Factory Mutual Research, Norwood, Massachusett. inFIRE stands for the international network for Fire Information and Reference Exchange, which is a worldwide consortium of libraries with significant collections of fire literature. Among other things, the members planned the upcoming Annual inFIRE Conference, which will be held at the National Research Council, Ottawa, Canada in May 2000.

Feature Article Reprinted by the University's Graduate School of Library and Information Science (GSLIS) Alumni Newsletter: In the upcoming GSLIS Alumni Newsletter, the editor will be printing my feature article in the "Profiles in Diversity" section that appeared in the August 1999 issue of the ILA Reporter (official publication of Illinois Library Association).

The University's Main Library Quilt Project: The FSI library contributed a quilt piece, showing two fire engines (red and green) and "Illinois Fire Service Institute Library" printed on it. Our library joined with other branch libraries as a part of the Main Library's Quilt Project. When the quilt is finished, it will be displayed at the University.
FSI Library’s 3-Year Strategic Plan (2nd ed., April 1999)

Main Objectives:

I. LIBRARIANSHIP (OUTREACH PROGRAM/ARCHIVES)
II. Campus, State, National, International LEADERSHIP
III. Action-Oriented RESEARCH

ULTIMATE GOAL:
STATE FIRE LIBRARY & INFORMATION CENTER

I. LIBRARIANSHIP (OUTREACH PROGRAM/ARCHIVES)
1. SEEKING PERMANENT FUNDING & GRANTS (with FSI’s continual support)
2. OPERATING WITHIN THREE GROUPS:
   a) Head Librarian with Library Staff & Students
   b) FSI Library Committee (from FDs) + FSI Faculty
   c) FSI Library Friends
3. COLLECTION DEVELOPMENT (the BEST & MOST UNIQUE)
4. COST-EFFECTIVE INFORMATION RETRIEVAL & DELIVERY SYSTEMS
5. LIBRARY BRANCHES - REGIONAL TRAINING CENTERS COOPERATED with STATE REGIONAL LIBRARY SYSTEMS
6. USER INSTRUCTION TRAINING PROGRAM
7. PHYSICAL PLANNING & EQUIPMENTS UPGRADING
8. STATE-WIDE FIRE RESOURCES UNION LIST
9. LIBRARY OPERATIONAL STATISTICAL DATABASES

II. State, National, International LEADERSHIP of Promoting Fire Information Services

III. Action-Oriented RESEARCH on the Outreach Program

NATIONAL TRAINING UPDATE
Richard L. Jaehne, Director

Today, at the national level, there are important events and forums occurring, which, if you participate in and support them, can potentially provide additional resources to help meet your training, equipment, and support needs. Last year, FEMA Director James Lee Witt commissioned and accepted the recommendations of a Blue Ribbon Panel on fire service support. As a result, he has increased the budget of the US Fire Administration (USFA) and appointed a career fire leader to the post of USFA Chief Executive Officer. He also commissioned an update of “America’s Burning,” which will be called “America at Risk.”

Recently, I represented the North American Fire Training Directors at a Fire Service Leadership Summit in Washington, DC, to discuss these opportunities. During the summit, we discussed common concerns that should be addressed by this report. The following common issues were submitted to the “America at Risk” committee.

- Goal of the report should be to update the definition of the role of the fire service in America in the 21st century.
- Provide funding and advocacy for all risk public education awareness.
- Reduce (with the goal of eliminating) firefighter death and injury through improved health and safety.
- Provide funding and advocacy for a systems approach to fire and life safety.
- Provide support and funding for fire service training and education.
- Encourage partnerships between the public and private sectors through incentives.

Clearly, these issues raise concerns about the growth of fire service missions and the resources required. The good news is that these concerns are being sought by national leaders who can address them. Representative Curt Weldon, who is a long-time friend and champion of the fire service, has provided a 5-point formula, which I believe, can guide our collective efforts:

1. Make policymakers aware
2. Strive for Unity... agree upon what you can agree upon.
3. Be proactive
4. Learn to work w/in the system
5. Be political... without being partisan

I believe that we have an historic opportunity to be heard, if we can create a common voice from our fire service Tower of Babel. I believe that these points can help us achieve unity of effort for the betterment of the fire service. We have a window of opportunity for your thoughts, your aspirations and your needs to be heard. I would encourage you to express them in every forum available to you. I would be privileged to include them in my input to national forums, if you will provide them to me.
IFSIs goal is to eventually conduct at least one class each month at each RTC. (Some Essentials classes are already scheduled at each site.)

The facilities are also available for use by individual fire departments for their own training, provided they make arrangements with the host department ahead of time. (Organizations that in any way make money from, or charge for training, are not permitted to use the RTCs without prior approval from IFSI.)

Each RTC has a smoke building (NOT a flashover simulator) which can be used for SCBA and search training, hose and ladder evolutions, and officer training. The other props vary from site to site, but may include a classroom, Saving-Own prop, drafting pit, roof simulator, rappelling tower, confined space prop, railroad car, and Haz. Mat. simulators. (See specific site)

For each live burn activity, at least one instructor, who has been through the train-the-trainer session on proper use of the facilities, must be present. (To arrange for this session, or to schedule the facility, please contact the host department.)

**Beardstown:**
Chief Keith Reller or Bob Young
217/323-1191

**Carbondale:**
T.O. Dave Keim 618/457-3245
IFS1/Champaign:
Howard Eskridge or Greg Fisher
217/333-3800

**Galesburg:**
T.O. Brad Stevenson 309/345-3791

**Mt. Vernon:**
T.O. Jeff Miller or Marc Harris
618/242-6883

**Procedures for use by individual department:**
1. Fill out proper Request form, and arrange with host department
2. Provide instructor trained in use of the facility
3. Review and follow the procedures for facility use
4. Clean up after yourself, and leave facility ready for next user
5. Submit student & department roster, subject(s), hours, and instructor to IFSI

**IFSI / CHAMPAIGN REGIONAL TRAINING CENTER**
Local Contact: Howard Eskridge or Greg Fisher 217/333-3800
(For information & to arrange for use by your own FD)
Facilities:
- Classroom
- 2-story Smoke Building
- Saving Our Own prop
- SCBA Maze
- Drafting Pit
- Railroad Tank

(other buildings may be available for non-live-fire activities such as laddering, hose advances, etc. on a case-by-case basis).
(See IFSI calendar & web site regularly for other scheduled classes & activities)

**CARBONDALE REGIONAL TRAINING CENTER**
Local contact: T.O. Dave Keim 618/457-3245
(For information & to arrange for use by your own FD)
Facilities:
- Classroom
- 3-story Smoke Building
- 4-story Tower (ladders, rappelling, hose advances, etc.)
- Saving Our Own prop
- Drafting pond with Dry Hydrants
- Roof simulator
- Confined Space prop

**GALESBURG REGIONAL TRAINING CENTER**
Local contact: T.O. Brad Stevenson 309/345-3791
(For information & to arrange for use by your own FD)
Facilities:
- Classroom
- 2-story Smoke Building
- Roof simulator
- Saving Our Own prop
- Confined Space simulator
- Railroad Tank Car
- Haz. Mat. leak simulator & other HM props

**MT. VERNON REGIONAL TRAINING CENTER**
Local Contact: T.O. Jeff Miller or Marc Harris 618/242-6883
(For information & to arrange for use by your own FD)
Facilities:
- 3-story Smoke Building
- Drafting pond

**REGIONAL TRAINING CENTERS (RTCs)**
On 6 December 1999, the Beardstown Regional Training Center opened with a short ceremony and burn training demonstration. The center is a partnership between Beardstown Fire Department, the City of Beardstown, Illinois River Valley Firefighters Association and the Institute, funded, in part, through the reimbursable training program. Beardstown Fire Chief Keith Reller hosted the opening. Beardstown Mayor and Alderman, State Fire Marshal Tom Armstead, Fire Chiefs from Beardstown Rural, Jacksonville, South Jacksonville, Littleton, Mt. Sterling, Rushville, Virginia, Schuyler County Rescue and the Institute all attended the opening. The center has 4 sealand containers configured as a burn simulator and will have a SCBA maze constructed with materials donated by local businesses. Departments interested in scheduling training at the site can contact Captain Bob Young, Training Officer for Beardstown Fire Department at (217) 323-1191.

BEARDO TOWN REGIONAL TRAINING CENTER

Local Contact: Chief Keith Reller 217/323-1191

(For information & to arrange for use by your own FD)
Facilities: Classroom
2-story Smoke Building
"Saving Our Own" prop
Confined Space prop
Railroad spur
Roof simulator

HELP !!!!!

FSI is compiling a book to honor Illinois firefighters who died in the line of duty. Please send Dave Clark the name, year, month, & date of death, and department of your members who died in the line of duty. Thank you.
CONTROL OF HIGH PRESSURE FIRES
Howard Eskridge, Program Director

Municipal fire departments responding to industrial facilities, or any occupancy that presents the potential of a pressure-fed fire, should consider the capabilities and limitations of their arsenal of nozzles. Failure to secure adequate cooling of exposures, or provide enough “push” to overcome fuel jets, may result in increased fire loss and a potential threat to personnel.

For long-range exposure protection, or for providing coverage to elevated columns or storage vessels, the old reliable smoothbore nozzle may be the best bet. Use of this nozzle requires the use of a stream straightener to provide a stream with maximum cohesiveness. The use of short stream straighteners with a honeycomb interior does not provide a stream with the reach or pattern definition that is provided when the longer stream straighteners are used. “The longer the better” seems to be the best for good stream development.

The use of automatic or constant-pressure nozzles must be undertaken with care. Without flow meters to verify the flow rate, a stream with a good appearance may not be delivering an adequate or desired volume to effect necessary cooling. In addition, if the flow rate is less than that desired, the mass of water is not there to provide “brute force” against a pressure-fed fire.

A number of municipal departments have begun using low-pressure fog nozzles. The manufacturers claim for these nozzles is that they deliver a given volume of water with less nozzle reaction, or recoil, than the standard 100 psi fog nozzles. The claim is, without question, true. However, one should look at just what the reduction in nozzle reaction actually is, and does it justify making the change. In structural use, where the velocity of the stream is not as critical, there are usually few, if any, problems with these low-pressure fog nozzles.

Making an approach to a pressure-fed fire must be given serious thought, and even more so with low pressure fog nozzles.

However, the ability of the low-pressure fog nozzle to push back a pressure-fed fire is substantially lacking. While the mass may be there, the speed or velocity of the water jet is significantly less than that of the standard 100 psi fog nozzle. Making an approach to a pressure-fed fire must be given serious thought, and even more so with low-pressure fog nozzles. The firefighters’ ability to “push” fuel and fire away is much less.

In tests conducted last year at the Training Grounds, standard and low-pressure nozzles of equal flow rate were compared. The fire was identical in all cases. A double-ricochet liquid propane release was set up, with the second deflection of fuel coming toward the nozzle.

In the first series of tests, 95 gpm nozzles were used. When the 75 psi nozzle was deployed, the approaching team was covered with fire 13 feet from the fuel release. Access to a control valve was impossible.

The next approach, using the same 95 gpm flow rate, but with a standard 100 psi nozzle, a full approach was made, and access to the valve at the point of release was possible. Similar results were found when using 150-180 gpm nozzles.

One manufacturer’s suggestion was to increase the operating pressure of a low-pressure nozzle to 100 psi when encountering pressure-fed fires. If we were concerned about nozzle reaction using standard 100 psi nozzles, why not just back down the operating pressure to 75 psi and have a lower flow?

If municipal fire departments operate in support of industrial response teams, each should know the type of equipment being used by the other. Perhaps a paraphrase of a familiar term might be applicable: “Try before you fry.”

A recent valve change on the hydraulic system of an aerial caused the bells to go off for the mechanic performing the repair work. The mechanic asked the department if they were using flammable or nonflammable hydraulic fluid, based on information derived from the service manual. The service annual stated that if nonflammable hydraulic fluid was used, the seals in the hydraulic valves were to be Viton, and not Neoprene.

The department advised it was using nonflammable hydraulic fluid. The removed valve had Neoprene seats.

The mechanic commented that a mix of incompatibles poses a high risk of seal failure. He also commented that the only way to verify the valve set material is to remove the valve and visually inspect the seat material.

In this particular situation, the mechanic also found paint on the traveling shaft of the valve. This resulted in inadequate or improper masking when the apparatus was originally painted. Paint chips can flake from the shaft during valve cycles, and migrate down the shaft resulting in seal/seat tears, or inadequate sealing of the valve.

Purchasers of equipment are at the mercy of the assembler or manufacturer. Spot-checking prior to acceptance might be well worth the time and investment.
THE FSI
ANNOUNCES THE
RETIREMENT OF
VIRGINIA STAHL

The FSI regretfully announces the retirement of Virginia Stahl, Administrative Secretary, effective December 30, 1999, after 42 years of dedicated service.

Virginia began her career at the University in June 1957 after graduating from Urbana High School. Her first career position was as a Clerk-Typist II at the Dairy Science Extension office and Personnel Services of the University.

In April 1958, Virginia married her high school sweetheart, Ron. During the next four years, she and Ron became the proud parents of a son, Shawn, and daughter, Lisa. In 1963, after a short term as a fulltime stay-at-home mother, Virginia returned to the UI on a two-month temporary assignment for the Division of University Extension in the Dean’s Office. That “temporary” assignment became a 20-year position as secretary to the Associate Dean until 1983.

One of the departments in The Division of University Extension was the Firemanship Training Office, the forerunner of the Illinois Fire Service Institute. Virginia handled the payroll and bookkeeping for the office and was indirectly involved with the operation of fire service training.

In 1983 the Division was decentralized with the retirement of the Division’s Associate Dean. Virginia accepted a position from the late Gerald Monigold, Director of the newly created Illinois Fire Service Institute. Shortly after accepting the position, Virginia was promoted to be Administrative Secretary to Mr. Monigold. For the next 17-yeors the Institute became Virginia’s “home-away-from-home.”

Virginia has many interests outside FSI. Professionally, she served as President and a member of the Board of Directors of Secretariat, a University organization. She has many activities planned with her husband, children, and grandchildren, as well as her many friends.

Virginia’s contributions to FSI are seen and felt every day by the faculty, staff, field staff, and fire service personnel. Her positive and “we will help you” attitude have made her a very special person to all. We will miss her and, we hope she will miss us in her special way, as she begins the next phase in her life—RETIREMENT.

A FOND FARWELL

I would like to announce that I will begin my retirement from the University of Illinois on January 1, 2000. It was a very difficult decision for me to make, but after forty years plus, I think it is time for me to direct my energies and time to my husband and family full-time.

I have been with the Illinois Fire Service Institute directly for 17 years and indirectly for over 30 years. I have made many, many friends over these years and I shall treasure all these friendships for the rest of my life. I have found that the members of the fire service are a very special group of dedicated individuals and it has been my honor and privilege to serve in an administrative/secretarial role in part of the training efforts all these years. The faculty and staff here at the Institute have always given me their encouragement and support and for this I thank each and every one of them from the bottom of my heart. They have always been my family away from home. We have grown together and have shared many happy and joyous times together, as well as a few tears along the way.

I wish to thank the field staff members, as well as the fire service members throughout the state, i.e. the Office of the Illinois State Fire Marshal, members of various associations, and committees. You have always shown kindness and concern as we have worked together over the years. I, too, shall always be grateful for having known each and everyone of you.

It was always my first priority to have a positive attitude, to be a source of helpful information to our staff, students, and the public, and to carry out the duties assigned to me in a professional manner. The bottom line was always how could we deliver the best fire training to our fire fighters in Illinois. I am very proud to have been a part of this mission and I know the Fire Service Institute will continue to be one of the finest Fire Training Facilities in the Nation. My very best wishes for continued success to the faculty and staff of the Institute. It has been my honor to have worked and served with you. Keep safe and God bless you always.

Virginia Stohl
Administrative Secretary
E. COLI 0157:H7, EMS, AND YOU

James P. Moore, FSI Field Instructor

With recent outbreaks of the bacteria Escherichia coli, commonly known as E. coli, a review of the background, signs and symptoms, treatment and prevention are in order to protect you, your family, and patients. Escherichia coli 0157:H7 is an emerging cause of foodborne illness. Estimates show up to 20,000 cases and 500 deaths annually in the U.S. from E. coli 0157:H7. Infection often leads to bloody diarrhea, and occasionally to kidney failure.

Background: The bacteria Escherichia coli was named for the German doctor, Theodor Escherich, who first isolated the genus of bacteria belonging to the family enterobacteriaceae, tribe Eschericheae. This bacteria is a common inhabitant of the intestinal tract of man and other animals. Because of its difficult name, it is usually referred to as E. coli.

E. coli 0157:H7 is one of hundreds of strains of the bacterium Escherichia coli. Although most strains are harmless and live in the intestines of healthy humans and animals, this strain produces a powerful toxin that can cause severe illness and death. (The combination of letters and numbers in the name of the bacterium refers to the specific markers found on its surface and distinguishes it from other types of E. coli.)

The purpose for E. coli in the intestinal tract is to breakdown cellulose and assist in the absorption of vitamin K, the bloodclotting vitamin. Recently, the E. coli bacteria have been used to replace chemotherapy treatment for patients with brain tumors. E. coli is being used to make "Verotoxin" which is used to shrink and eliminate cancerous brain tumors. (Heil, 1999).

The Spread of E. Coli: Most illness has been associated with eating undercooked, contaminated ground beef. Person-to-person contact in families, and childcare centers is also a mode of transmission. Infection can also occur after drinking raw milk and after swimming in or drinking sewage-contaminated water.

As previously stated, the E. coli bacteria is present in the intestines of humans and animals. Meat that we consume can be contaminated during slaughter of animals and the organism can become thoroughly mixed into beef when it is ground. The bacteria may also be present on the cow's udders or on equipment and thus get into raw milk.

Eating meat, especially ground beef, that has not been cooked sufficiently to kill E. coli 0157:H7 can cause infection. Contaminated meat looks and smells normal. Drinking unpasteurized milk and swimming in or drinking sewage-contaminated water can also cause infection. Foods that have been fertilized with manure also carry a risk of contamination, and should be washed thoroughly. Bacteria in diarrheal stools of infected persons can be passed from one person to another if hygiene or handwashing habits are inadequate. This is particularly likely among toddlers who are not toilet trained. Family members and playmates of these children are at high risk of become infected.

Recently, Charles Gerba, and his colleagues at the University of Arizona, completed a study which found over 20% of all washing machines have E. coli, salmonella bacteria, rotavirus (causing severe diarrhea in children) and adenovirus (causing upper respiratory infection). Gerba, best known as the scientist who pointed out the bacteria growing on sponges and cutting boards in America's kitchens, states that while regular detergents and water kill 99 percent of organisms, millions survive the wash cycle and could go on to infest the next load of laundry. Gerba also noted that these infections can survive the heat of a permanent-press drying cycle. (Karp, 1999).

To get rid of all of the pesky microbes, Gerba suggests washing the white load first with a cup of bleach or a detergent with sanitizer and washing your hands after handling dirty laundry.

Signs and Symptoms of E.Coli Infection: The incubation period is 3 to 8 days at which point the following symptoms will occur. Severe abdominal ramps followed by watery diarrhea that often becomes bloody. Patients may also suffer nausea and vomiting, accompanied by low-grade fever. In some persons, particularly children and the elderly, the infection can lead to severe complications, including kidney failure (CDC, 1999).

Young children may develop HUS (hemolytic uremic syndrome) which can cause kidney failure, brain damage, strokes, and seizures. A similar problem, TTP (thrombotic thrombocytopenic purpura), can cause strokes in the elderly.

Field Treatment: As always, you must treat the symptoms at hand. In the early stages when dehydration from the excessive vomiting and diarrhea is present, consider IV fluid challenges to maintain a systolic blood pressure >90 mmHg, 100% oxygen, and supportive care are a must. Do not use any anti-diarrhea medications.

In cases of HUS and TTP, you must gauge your treatment on the symptoms present. Use caution not to over load the patient with fluids. Frequent reassessment of lung sounds is a must.

Prevention of E. Coli 0157:H7 Infection: Proper hand washing is a must and is the best protection against any spread of the disease. Cook all ground beef and hamburger thoroughly. Ground beef should be cooked to an internal temperature of 160 degrees F. If you do not have a meat thermometer, cook ground beef patties until they are no
longer pink inside. Freezing does not kill E. coli bacteria, so thorough cooking is essential. Sanitize your washing machine regularly with a bleach and water cycle. Drink only pasteurized milk, juice, and cider. Wash fruits and vegetables thoroughly, especially those that will not be cooked. Children under five years of age, immunocompromised person, and the elderly should avoid eating alfalfa sprouts until their safety can be assured.

E-mail questions or comments to: Captjimmi@aol.com


FIRE PHOTOGRAPHY
G. T. Smith, Program Director

The Illinois Fire Service Institute is offering a newly developed course that will address the use of the 35mm camera and its use in the fire service. Scheduled topics include fire investigation photography, use of flash, and photographing flames/smoke etc. Current plans include doing some photography during one of the evenings during the course. Each course participant will photograph various subjects and photos will be developed and then reviewed in class. Each course participant must bring a 35mm camera. Cameras that can be operated in a manual setting are preferred to fully automatic cameras. Film will be furnished and developed by IFSI and the course fee includes these costs.

Course dates: June 13-15, 2000
Course Location: FSI@Champaign
Course Fee: $150.00

IFSI / NIPSTA to Co-Host NFA Classes

The National Fire Academy offers classes in a variety of formats. One of these is through Regional Delivery. IFSI has arranged for two of these classes to be held at NIPSTA in Glenview this spring. Students will be coming from several states.

Fire Service Planning Concepts For The 21st Century will be held March 6-11, 2000.

This 6-day course provides the opportunity for fire officers to experience the process of producing a community fire protection master plan.

Challenges For Local Training Officers will be held April 3-8, 2000.

This 6-day course is designed to provide students with the essential tools and skills to coordinate training in Fire/EMS organizations. Students who have taken Training Program Management will not be admitted.

To apply and register, students must send NFA (not IFSI) general admissions application forms, at least 30 days in advance, to IFSI. We must sign the applications and forward them to NFA.
THE USE OF POWER BASES IN THE FIRE SERVICE

By Bill Farnum, Program Coordinator

I would like to spend a little time in this session and discuss a subject that often sparks passion among the folks involved in the discussion. Power. More precisely, the bases of power that we as individuals, and officers, use to get a job done. When I say that we use power to influence people, I do not mean that we go on an ego trip. Quite the opposite, we are using our knowledge, relationships, and positions of authority to achieve an objective, not to gratify ourselves. French and Raven 1 coined the labels we use in the Management series.

I would assume that the power, which comes with rank in the Fire Service, is universally known and understood. This base of power is known as legitimate power. That is the tool that is needed so a Captain can "outvote" a Lieutenant operationally, and it comes automatically with the rank structure. The higher you are on the food chain, the more legitimate power you possess.

Coercive power is that power we possess when we have the ability to reward or withhold rewards. I am sure each of us have heard of fire stations or shifts that serve as a convenient place to house troublemakers. To send the "Black Sheep" to such a station would be an example of using coercive power. Constantly assigning boring or extremely physical work as a form of punishment would be another. Early in my career, I worked for a Battalion Chief who called my Truck Company to every working fire to punish my Lieutenant. He was trying to coerce him into submission and ended up rewarding me in the process. I have always believed that my Lieutenant enjoyed it also. Coercive power can be useful, however, we must often increase the reward to maintain a set level of cooperation. It is useful short term, but using it long term gets expensive.

The relationships we build with the members of our crew give us a degree of referent power. The closer the relationship, the greater the power. This can be a strong argument for assigned stations, where those relationships grow over time. There are times a subordinate will accomplish an objective or cooperate with a program based solely on his relationship with the leader. After I made Captain and had my own station, I learned of a situation in which a crewmember refused to file a harassment complaint because of my relationship with him. The Lieutenant in the station was harassing him, and others were urging him to file a complaint. Filing the complaint was not only within his rights, but was certainly justified. He refused to file because he was afraid that I would get into trouble as the station officer. When I learned of the situation from a third party, I talked to the employee and his officer and we resolved the issue in the station. We were able to resolve it because of the referent power given me by the crewmember. It was based on our relationship, not our rank.

We also have a degree of power with our peers based on knowledge and experience. It is known as expert power. Think for a minute of some task that you perform. Search and Rescue perhaps, or maybe Hazardous Materials response. Now think of the person on your department who is the best at those type operations. The person who trains the rest of the department. They are the ones who write the department guidelines and procedures. They teach the classes. That person has a high degree of expert power in those situations. The more knowledge they possess, the greater the power.

We make the best use of our power when we select the power base we use, matching it to the situation at hand. When

---

FIRE/ARSON INVESTIGATION
G. Terry Smith, Program Director

We have listed the locations and dates of upcoming Fire/Arson Investigation classes here to assist you with scheduling and registration. We also have tentative host department locations up through the year 2002. If you need any of this information to assist in your department's future planning, please contact us.

<table>
<thead>
<tr>
<th>Location</th>
<th>Dates</th>
<th>Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSI @ Champaign</td>
<td>March 13-17, 2000</td>
<td>F/A Module I</td>
</tr>
<tr>
<td>FSI @ Champaign</td>
<td>March 20-24, 2000</td>
<td>F/A Module II</td>
</tr>
<tr>
<td>FSI @ Champaign</td>
<td>April 24-28, 2000</td>
<td>F/A Module III</td>
</tr>
<tr>
<td>Westmont</td>
<td>April 03-07, 2000</td>
<td>F/A Module I</td>
</tr>
<tr>
<td>Westmont</td>
<td>April 10-14, 2000</td>
<td>F/A Module II</td>
</tr>
<tr>
<td>Westmont</td>
<td>May 08-12, 2000</td>
<td>F/A Module III</td>
</tr>
<tr>
<td>Fox Lake</td>
<td>Sept. 18-22, 2000</td>
<td>F/A Module I</td>
</tr>
<tr>
<td>Fox Lake</td>
<td>Sept. 25-29, 2000</td>
<td>F/A Module II</td>
</tr>
<tr>
<td>Fox Lake</td>
<td>Nov. 13-17, 2000</td>
<td>F/A Module III</td>
</tr>
<tr>
<td>Carpentersville</td>
<td>Oct. 16-20, 2000</td>
<td>F/A Module I</td>
</tr>
<tr>
<td>Carpentersville</td>
<td>Oct. 23-27, 2000</td>
<td>F/A Module II</td>
</tr>
<tr>
<td>Carpentersville</td>
<td>Dec. 04-08, 2000</td>
<td>F/A Module III</td>
</tr>
</tbody>
</table>

Early registration is encouraged because this course series usually fills to capacity. If you have any questions, please contact Investigation/Prevention Program Director G. Terry Smith at (217) 333-9014.

RESCUE CORNER
Terry Sutphen, Program Director

Are You Ready For A Grain Bin Rescue?
Each year, people become entrapped in on-farm grain storage bins. Some rescue attempts are successful, but most are not. Do you know what are the problems in attempting grain bin rescues? Have you prepared to deal with this potential rescue problem? Is there a potential grain bin entrapment in your future? Maybe.

The Agricultural Safety and Health Division, of the University of Illinois Cooperative Extension Service, has compiled statistics on farm related deaths and injuries occurring in Illinois. It reports that since 1986, there were 27 deaths resulting from entrapments in grain bins. This averages about 2.25 deaths per year. This statistic only reflects the number of deaths occurring from entrapment. How many entrapments go unreported? The number must be much higher.

What situations, or conditions, contribute to the potential entrapments this year?

✓ Farmers frequently work alone. Any task being performed by them usually goes unobserved.
✓ Larger than average harvests the last couple of years requires more storage, therefore leading to more entries.
✓ Selling price of grain being lower than the cost of production. Farmers have had to store more grain waiting for higher prices.
✓ Why Do People Enter Grain Bins?
  ✓ To inspect the quality and condition of the stored grain.
  ✓ To dislodge encrusted grain or obstructions to flow while unloading the bin.
  ✓ Children playing.

How Does A Person Become Entrapped?
Sometimes the grain can become encrusted either as a cap over the grain pile or against one side of the bin. A person dislodging this encrustation can be covered over by the grain or fall into the grain pile. The most frequent cause of entrapment occurs when a person enters the bin to remove a blockage in the discharge outlet when the grain is being unloaded from the bin.

The most common method of unloading a bin is by drawing the grain from the bottom center of the bin, usually by auger or conveyor belt. This action causes the grain to form an
inverted cone in the grain pile. The grain is pulled from the top surface down a center core to the unloading port. This is called the "enveloping flow." The grain across the bottom and around the sides of the bin does not move. Consequently a person on the surface of the grain pile will be sucked into this "enveloping flow" and can be rendered completely helpless in less than 5 seconds. Unless the person is in full body harness and tied off from above, they can be completely submerged in less than 20 seconds.

People frequently think that they can be pulled out from the grain. This is not really possible because grain is like a fluid and it exerts pressure over the entire area of any object that is submerged in it. The amount of force required to pull someone up through the grain is much greater than required in water because grain exerts no buoyant force and has much greater internal friction. Also, the flowing grain produces a suction-like effect, similar to that of mud, making it extremely difficult, if not impossible, to pull an entrapped person from the flowing grain.

Suffocation hazard
Once a person is submerged in the grain, suffocation can result very rapidly. Some people have died after being submerged under only 12 inches of grain. Grain is heavy, about 50 pounds per cubic foot. A person submerged only 12 inches below the surface of the grain may have up to 300 pounds compressing on the chest. This is enough to prevent person inhaling thus leading to suffocation. Victims frequently are found to have grain forced into their mouth and throat. If a person becomes entrapped, they can provide themselves with some protection for themselves by curling into a fetal position and covering the face with their hands before they are totally engulfed. This helps prevent compression of the chest and keeps the grain from flowing into the mouth. Many bins inject forced air into the bin to keep the grain aerated. This will help an engulfed person to breathe if they have protected themselves. The time factor is very important, even for someone who has taken this protective step. Successful rescue operations have to be started as soon as possible after arriving on the scene.

What equipment do you need and what do you have available?
What are the rescue personnel and what skills do they have?
What method[s] of rescue can be used?

The method of rescue is dictated by:
1. The type of bin, method of construction, and materials used.
2. The capacity of the bin and the amount of grain in the bin.
3. Is the person completely covered by the grain?

Prior to attempting a rescue, several things must be accomplished:
1. Shut down and lockout the unloading system.
2. Start up the aeration fans.
3. Try to identify, through witnesses if available, the location of the victim in the bin.
4. Methods of extricating the victim from the grain:
   1. Cutting open the bin to dump the grain.
   2. Used when the victim is completely submerged under the grain and his/her location is undetermined.
   3. Cut two or more "V" shaped openings, in a single panel each, at opposing sides of the bin.
   4. Fastest & safest method of locating and freeing the victim.
   5. The most effect method to quickly unload the bin.
   6. Victim can be removed through the cut opening in the bin.
   7. Can be used on most on-farm metal storage bins, up to 20,000-bushel capacity.

Rescue Operations
Considerations before attempting a rescue:
1. Who is the victim, what is their age and condition, and how long have they been engulfed?
2. Is it possible to make a viable attempt at actually rescuing the victim?
3. Try to identify, through witnesses if available, the location of the victim in the bin.

Methods of extricating the victim from the grain:
1. Cutting open the bin to dump the grain.
2. Used when the victim is partially engulfed, unable to move.
3. Rescue unable to extricate person from grain by other means.
4. Victim can be lifted out through the top entrance of the bin or through a cut opening.

Each of these methods takes planning and practice. Learning how to use the tools and skills necessary to safely and successfully complete a rescue operation is a must. As for any potential emergency response, failing to plan is planning to fail. How will you respond to a grain bin entrapment?

For further information on training for grain bin rescue operations, contact Terry Sutphen, FSI Rescue Program Director. (217) 333-8927 or tsuthphen@uiuc.edu.
ILLINOIS FIRE SERVICE INSTITUTE OFFICES AND TRAINING CENTER

<table>
<thead>
<tr>
<th>NAME</th>
<th>PHONE</th>
<th>EMAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richard L. Jaehne, Director</td>
<td>217/333-8926 or 217/333-3801</td>
<td><a href="mailto:fsi@uiuc.edu">fsi@uiuc.edu</a></td>
</tr>
<tr>
<td>James B. Straseske, Associate Director For Administration &amp; Research</td>
<td>217/333-3801</td>
<td><a href="mailto:jstrases@uiuc.edu">jstrases@uiuc.edu</a></td>
</tr>
<tr>
<td>David F. Clark, Associate Director of Academic Affairs</td>
<td>217/244-9674</td>
<td><a href="mailto:d-clark@uiuc.edu">d-clark@uiuc.edu</a></td>
</tr>
<tr>
<td>Virginia Stahl, Administrative Secretary</td>
<td>217/333-3801</td>
<td><a href="mailto:v-stahl@uiuc.edu">v-stahl@uiuc.edu</a></td>
</tr>
<tr>
<td>Nancy N. Ducey, Hazardous Materials Training</td>
<td>217/244-5108</td>
<td><a href="mailto:n-ducey@uiuc.edu">n-ducey@uiuc.edu</a></td>
</tr>
<tr>
<td>Howard D. Eskridge, Industrial Training/Firefighting Training</td>
<td>217/333-5018</td>
<td><a href="mailto:heskridge@uiuc.edu">heskridge@uiuc.edu</a></td>
</tr>
<tr>
<td>G. Terry Smith, Investigation &amp; Prevention Training</td>
<td>217/333-9014</td>
<td><a href="mailto:gt-smith@uiuc.edu">gt-smith@uiuc.edu</a></td>
</tr>
<tr>
<td>Terry Sutphen, Rescue Training</td>
<td>217/333-8927</td>
<td><a href="mailto:tsutphen@uiuc.edu">tsutphen@uiuc.edu</a></td>
</tr>
<tr>
<td>Bradley G. Bone, EMS Training</td>
<td>217/333-4215</td>
<td><a href="mailto:b-bone@uiuc.edu">b-bone@uiuc.edu</a></td>
</tr>
<tr>
<td>Bill Fornum, Fire Officer Training</td>
<td>217/333-9027</td>
<td><a href="mailto:w-fornum@uiuc.edu">w-fornum@uiuc.edu</a></td>
</tr>
<tr>
<td>Greg Fisher, Reimbursable Training</td>
<td>217/244-1220</td>
<td><a href="mailto:gafisher@uiuc.edu">gafisher@uiuc.edu</a></td>
</tr>
<tr>
<td>John (Mac) McCastland, Chicago Region Fire Manager</td>
<td>815/462-4737</td>
<td></td>
</tr>
<tr>
<td>Kristy Berbaum, Firefighting &amp; Reimbursable Programs</td>
<td>217/244-6185</td>
<td><a href="mailto:kberbaum@uiuc.edu">kberbaum@uiuc.edu</a></td>
</tr>
<tr>
<td>Alisa Slaughter, Hazardous Materials Program</td>
<td>217/244-7135</td>
<td><a href="mailto:aslaught@uiuc.edu">aslaught@uiuc.edu</a></td>
</tr>
<tr>
<td>Patty Wieland, Fire Officer, EMS, Rescue, &amp; Investigation/Prev. Programs</td>
<td>217/333-8921</td>
<td><a href="mailto:pwieland@uiuc.edu">pwieland@uiuc.edu</a></td>
</tr>
<tr>
<td>Mary M. Avelis, E-mail: <a href="mailto:mmavelis@uiuc.edu">mmavelis@uiuc.edu</a></td>
<td>217/333-2163</td>
<td></td>
</tr>
<tr>
<td>Lian Ruan, E-mail: <a href="mailto:l-ruan@uiuc.edu">l-ruan@uiuc.edu</a></td>
<td>217/333-8925</td>
<td></td>
</tr>
<tr>
<td>Lori Christman, E-mail: <a href="mailto:lchristm@uiuc.edu">lchristm@uiuc.edu</a></td>
<td>217/333-9013</td>
<td></td>
</tr>
<tr>
<td>Teresa Kreps, E-mail: <a href="mailto:kreps@uiuc.edu">kreps@uiuc.edu</a></td>
<td>217/333-7050</td>
<td></td>
</tr>
<tr>
<td>Jan Rusk, E-mail: <a href="mailto:janrusk@uiuc.edu">janrusk@uiuc.edu</a></td>
<td>217/333-8631</td>
<td></td>
</tr>
<tr>
<td>Barry Wagner, E-mail: <a href="mailto:b-wagner@uiuc.edu">b-wagner@uiuc.edu</a></td>
<td>217/333-9015</td>
<td></td>
</tr>
</tbody>
</table>