BY

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**Project Background**

InterFIRE VR was funded by a grant from the Bureau of Alcohol, Tobacco and Firearms, United States Department of the Treasury, now the United States Department of Justice, Bureau of Alcohol, Tobacco, Firearms and Explosives. InterFIRE VR’s content was developed over a period of more than two years by fire investigation experts from ATF, the United States Fire Administration, the National Fire Protection Association, and American Re-Insurance Company. The resulting interFIRE VR software provides both a strong overview and specific detail on all aspects of fire investigation.

From inception, interFIRE VR’s goal was to improve the effectiveness of the fire investigation process by raising the base level of knowledge of all fire investigators. To this end, the interFIRE VR software and web site (www.interfire.org) train investigators and student investigators through instruction in the best practices in core critical actions before the fire, at the fire scene, and in the follow-up investigation. These best practices are a “street-proven” systematic protocol for investigating a fire. The critical fire investigation topics addressed in interFIRE VR include:

- Forming, staffing and equipping an effective Fire Investigation Unit
- The Team Concept
- Introduction to a systematic fire investigation protocol
- Conducting investigations with the jury in mind
- A systematic approach to witness interviews
- Recognition of fire patterns
- Evidence sampling and collection methods
- An overview of insurance documents and trial procedures

InterFIRE VR was designed to be easy to use. It has four components:

- **TUTORIAL**: A complete, step-by-step guide to preparing for a fire scene investigation, investigating the fire scene, and following up the scene investigation.
- **RESOURCE FILE**: A compendium of selected articles, abstracts, resources, and photographs on in-depth fire investigation topics.
- **SCENARIO**: A “virtual reality” practical exercise where the user conducts a real fire investigation on his or her computer, with constant feedback on progress.
- **WEB SITE** ([www.interfire.org](http://www.interfire.org)): An Internet resource updated regularly that keeps fire investigation professionals up-to-date on breaking legal and technical developments in the field. The investigator can also research product and vehicle recall information, MSDS information, and other fire investigation topics.

Since interFIRE VR was released, the Development Committee has acknowledged that the opportunities for how the software can be used have multiplied beyond the original expectations. In addition, user feedback has identified the need to create a User’s Guide to help users understand the many ways in which they can access the training in interFIRE VR. This User’s Guide will help you get the most out of interFIRE VR. You will learn tips, techniques, and approaches that will, when applied to the interFIRE VR software, add to your knowledge and refine your approach to the fire scene.
Organization of the interFIRE VR User’s Guide

No matter what your profession—fire service, police, insurance investigator, prosecutor, allied professional, or student—this User’s Guide shows you a step-by-step process that takes advantage of the flexibility built into interFIRE VR to achieve a variety of training objectives.

The Guide is organized into nine sections:

**Section 1: InterFIRE VR Quick Start Guide:** Gets you up and running with the software by explaining how to install and run the program.

**Section 2: Working the Tutorial:** Shows you how to get the most out of the interFIRE VR Tutorial by suggesting three ways to view the content to achieve three different training objectives.

**Section 3: Using the Resource File:** Details effective ways for you to access the articles and tools.

**Section 4: Learning Pathways in the Scenario:** Suggests three different ways for you to work the virtual reality fire investigation based on your training needs and experience level.

**Section 5: Understanding the Virtual Prosecutor Feedback:** Helps you gain insight into your performance in the Scenario by explaining how to interpret the interFIRE’s Virtual Prosecutor feedback and translate that into what sections you should review in the Tutorial.

**Section 6: Profession-Specific Ways to Explore interFIRE VR:** Lists a single training pathway of Tutorial, Scenario, and Resource File modules that are pertinent to specific profession. Following this profession-specific syllabus helps practitioners of that profession to understand their role in fire investigation, and cross-trains professionals in the responsibilities of others at the fire scene.

**Section 7: Five Innovative Ways to Use interFIRE VR:** Presents five ways to extend the capabilities of interFIRE VR beyond the single-user model and into different training and public education environments.

**Section 8: InterFIRE VR for Experienced Investigators:** Suggests specific challenges for experienced investigators and highlights areas of software that contain more advanced content.

**Section 9: The interFIRE VR Web Site (www.interfire.org):** Provides an overview of the resources available on www.interfire.org, the program’s web site dedicated to keeping the fire investigation community up-to-date on technological and legal information in the field.

Throughout this Guide, specific examples and suggested routes through the software show you how to truly plumb the depth of the training provided and employ it in unique ways.

Two companion documents, *The interFIRE VR Student Handbook* and *The interFIRE VR Instructor’s Manual* provide information targeted to the classroom. If you are a novice investigator in a fire investigation training course using interFIRE VR, you may want to start with *The interFIRE VR Student Handbook*. 
SECTION 1: interFIRE VR QUICK START GUIDE

1. Place “Disk 1 Tutorial” in the CD drive of your PC.

2. Most computers will automatically start the program. If this doesn’t happen, do the following:
   a. Double-click “My Computer” and double-click your CD-ROM drive letter. If this automatically
      launches the installer menu, skip to Step 3. If not, go on to Step 2b.

3. An information box will appear showing these four programs:
   First, install the utility programs “QuickTime 4” and “Explorer
   4.0.” To install, click the button for that program and follow the
   instructions. Once the installation is complete, you will be
   returned to this installer menu and can click on the button to
   install the next program. New computers will probably contain
   newer versions of QuickTime and Explorer than the versions that
   are on the interFIRE VR CD-ROM. If your computer contains
   newer versions and you try to load the version contained on the
   CD-ROM, a message will appear “A newer version is installed.”
   Simply click “Cancel” and move to installing the next program. When you have finished installing
   QuickTime and Explorer, if necessary, move on to Step 4.

4. Now, install interFIRE VR by clicking “Install interFIRE VR.” Follow the installer instructions, clicking
   “Next”, “Agree” and “Finish” until the program is installed. When the installation is completed, you will see a
   message telling you so. Then, click the “X” at the top corner of the installer menu to close the installer menu.

5. To adjust the computer’s settings to run the program full-screen and at the proper color depth, double-click on
   “My Computer” on the desktop. Then, double-click “Control Panel,” then double-click “Display,” and slide the
   color dial to read “thousands of colors” or “millions of colors” and the Screen Resolution to read “640 x 480.”
   Click “Apply” and then “OK”. The computer is now ready to run the program.

6. To start interFIRE VR, go to the Task Bar at the bottom of the screen, click “Start,” move your cursor up to
   “Programs,” move the cursor over “interFIRE VR,” then click “interfire.exe”. If you would like to create a short-
   cut to the program, click “Start,” move your cursor up to “Programs,” move the cursor over “interFIRE VR,” then
   hold down the right mouse button while your cursor is on the fire icon and drag it out on the desktop. Release the
   mouse button. You can now start interFIRE by double-clicking this fire icon.

7. Once you have started the interFIRE VR software, you must first Log In. Follow the on-screen instructions to
   create a user file. Logging in with a password creates a file for your work. You can use your real name or any
   other user name you would like. The software only allows one file per user name, so if you want to start a new
   investigation from scratch, create a new user name.

   This program can support ten or more students working sepa-
   rately and is designed to save all work for each user in an indi-
   vidual file. This permits you to spend whatever time you have
   available working on the investigation and save your work by
   exiting the program. The next time you open the Scenario
   under your user name and password, all your investigation
   work (interviews, photography, etc.) is restored to your file
   and you are returned to the same place you left off.
The interFIRE VR Tutorial is a “street-proven” fire investigation protocol organized in a flow chart format. It covers the entire fire investigation process from unit organization to trial testimony.

If your training goal is to learn this entire process, follow this flow chart from beginning to end and view and listen to all the content under each step.

The Tutorial can also be worked in several other ways. Three of the possibilities are presented here:

- **Topic-Specific Explorations** keys on a single skill and pulls out all the Tutorial sections related to that skill.
- **Procedures Check** helps compare your unit’s operational method with interFIRE VR’s recommended fire investigation protocol to help improve results.
- **Profession-Specific Pathways** show professionals who work at the fire scene how to pick out Tutorial sections that are most relevant to their work.

Each possibility is discussed below.

**Topic-Specific Explorations**

Try this Tutorial approach if your training goal is to learn more about a specific topic, such as evidence collection. Since information about a specific topic may be found in more than one area in the protocol flow chart, glance through the Tutorial and select only the modules that cover the topic of interest. An example of this topic-specific approach is detailed below, with a list of the interFIRE VR Tutorial sections that touch on evidence collection:

**EVIDENCE COLLECTION**

- “Before the Fire > Equip Your Investigative Team” includes lists of evidence collection equipment.
- “Roll-Up > Preserve Scene and Physical Evidence” and “Roll-Up > Secure the Scene and Witnesses” explain the actions first responders should take to preserve evidence at the scene for future collection.
- “Preliminary Scene Assessment > Size Up the Structure” and “Preliminary Scene Assessment > Walkthrough with First Respondent” detail how to identify areas of the fire scene likely to contain evidence and determine what fire suppression actions on the fireground may impact evidence collection.
- “Fire Scene Examination > Document the Scene” presents best practices for documenting evidence before collection.
- “Fire Scene Examination > Handle Injuries and Fatalities” includes information on the evidentiary aspects of victim injuries.
- “Fire Scene Examination > Examine the Scene and Analyze Fire Flow” documents how to understand the fire spread.
- “Fire Scene Examination > Collect and Preserve Evidence” catalogs how to collect and package all major types of physical evidence at a fire scene.
- “Fire Scene Examination > Eliminate Accidental Causes” details the process of elimination of potential accidental causes.
- “Fire Scene Examination > Use Canine Units” explains how Accelerant Detection Canine Units work and how to best use this tool.
- “Fire Scene Examination > Submit Evidence for Testing” explains testing procedures for
common types of fire scene evidence, how to submit evidence for testing, and how to write an Evidence Transmittal Letter.

- “Follow-Up Investigation > Interpret Non-Forensic Lab Results” explains how to get the most from engineers and technicians in examining potential accidental causes.
- “Follow-Up Investigation > Interpret Forensic Lab Results” helps you understand what results the lab will return by showing sample lab reports for major types of evidence, including explosives, fibers, fingerprints, glass, handwriting, fire debris, paint, plastics, and toolmarks.

**Procedures Check**

Try this Tutorial approach if your department or unit already has a fire investigation procedure. Use the Tutorial as a best practices “check” to see if improvements can be made to your unit’s existing procedure. Review the content in each Tutorial section, as listed below. As you are reviewing the content, keep the questions in mind and answer them as part of your procedure improvement process.

**“BEFORE THE FIRE”**

Does your fire investigation plan cover the bases? How?
Do you routinely work investigations with county, state, and federal fire investigators? Do you know the advantages of coordination and have you reached out to other investigative agencies?
Have you properly defined all team members’ responsibilities at the scene?
What are your community’s fire prevention strategies? Can they be improved and, if so, how?
Is your investigative team properly equipped? What additional equipment is needed?

**“ROLL-UP”**

Have first responders (firefighters, uniformed patrol officers, EMS) and investigators been properly trained in preserving the scene, physical evidence, and witnesses?
Is there solid communication and coordination between the fireground commander and the fire investigation unit?

**“PRELIMINARY SCENE ASSESSMENT”**

Have investigators been properly trained in what to ask fire crews and uniformed police and how to document their responses?
Have first responders been trained how to recognize important fireground characteristics and situations and how to communicate these to investigators?
Do your investigators know when they can legally enter private property and how to conduct legal fire scene examinations?
Are investigators performing the initial scene “size-up” correctly?

**“WITNESS INTERVIEWS”**

Are fire investigators well-trained in interviewing techniques, including prioritization, approach, and questioning techniques for different types of witnesses?
What legal mechanisms are used to secure consent?
What is your practice for documenting the interview and does it provide the highest degree of evidentiary value possible?
How are witness statements verified and corroborated?

**“FIRE SCENE EXAMINATION”**

What are the guidelines for documenting the scene?
How are injuries and fatalities handled and what is the role of the medical examiner in your jurisdiction?
Have team members been properly trained in evidence recognition, collection and preservation?
How have team members been trained in elimination of accidental causes and cause determination?
Do you have a close relationship with your forensic chemist? Do you know what their evidence submission requirements are and how to comply with them?
How are the needs for additional resources, such as heavy construction equipment or structural engineers, assessed and what relationships are in place to facilitate bringing those resources to the scene?
What relationships exist with canine units and how are they tapped to respond?

“FOLLOW-UP INVESTIGATION”
What provisions have been made to conduct financial investigations?
How are electronic public record, insurance claims and criminal history database searches integrated into the follow-up investigation?
How have investigators been trained in understanding lab results and advanced laboratory techniques?

“INSURANCE INVESTIGATION”
What contacts have been established with the insurance industry?
Do your investigators know where the various insurance files related to a loss site are located and how to access them?
Are your fire investigators thoroughly familiar with your state’s Arson Immunity Legislation and how to use it in a fire loss under investigation?
Have investigators been trained in understanding insurance documents and working with insurance professionals?

“TRIAL PREPARATION”
How are investigation case files organized and prepared for trial?
How are investigators’ CV’s/resumes prepared for trial?
What relationships with arson prosecutors are maintained?
What training do team members have for testifying in depositions and in court?

Make a list of areas for improvement that you identify when doing this check. Bring these areas to the attention of Command and address the issues through the proper channels.

Profession-Specific Pathways
The Tutorial can also be viewed through the lens of a specific profession or interest. Please refer to Section 6: Profession-Specific Ways To Explore interFIRE VR for Tutorial paths for the following professions:

FIRST-RESPONDER (Police, Fire, EMS)
INSURANCE ADJUSTER
PROSECUTOR OR ATTORNEY
EVIDENCE TECHNICIAN, FORENSIC CHEMIST OR LABORATORY PERSONNEL
PHOTOGRAPHER
FORENSIC ACCOUNTANT
MEDICAL EXAMINER
CANINE HANDLER

In addition, the section Section 7: Five Innovative Ways to Use interFIRE VR also has ideas for how to use the Tutorial differently, including “drill down” on one specific topic or skill.
SECTION 3: THE RESOURCE FILE

The interFIRE VR Resource File supports the Tutorial with more specific information on fire investigation topics. The Resource File, accessible from the main software menu or from sections of the Tutorial, can be used in a variety of ways:

BROWSE as a standalone proactive resource. Spend some time browsing through the Resource File, exploring topics of interest, reading articles and handouts. Print (using the PRINT button in the toolbar) items that will assist in your daily work, such as Interview Checklists, the Ignitable Liquids Classification System, or Interview Consent Forms. Place these items in your investigative toolkit.

SEARCH as a reference. During your daily work, you may come across topics or terms requiring a deeper understanding than you currently possess. Use the Resource File as a reference to look up these topics. From the Resource File, select “SEARCH” from the toolbar. Then, type the term or the topic name where the double dashes are in the keyword box. The first topic that matches that term will highlight. Double-click any entry in the list to open that article. If you don’t see what you are looking for, scroll through the list using the scrollbar on the right, as the topic may be listed under another name.

JUMP TO as support for the Tutorial. All Tutorial content screens contain a button in the lower right hand corner named “Jump To Resource File.” By mousing over this button, you can see the list of topics in the Resource File that relates to the Tutorial screen you are currently viewing. To Jump to the Resource File and investigate these topics in more depth, click the “Jump to Resource File” button. When you are ready to return to the Tutorial, click “Jump Back to Tutorial.”
You can also **REVIEW** the Resource File as a component of one of the Training Pathways suggested in this User’s Guide. **BROWSE** through the Resource File sections suggested in the Pathway you are following.

Each resource listed has an accompanying icon. These icons identify the type of resource:

- **HANDS-ON TOOLS** are items like checklists that can be used in the field or referred to frequently.
- **FULL-LENGTH ARTICLES** are reprinted from journals, monographs, and other published sources.
- **ABSTRACTS** are brief descriptions of published articles with information on where to obtain the article.
- **BOOK REFERENCES** are chapter and page citations for relevant material in textbooks.
- **TUTORIAL REFERENCES** are pointers to interFIRE VR Tutorial sections.
By design, the interFIRE VR Scenario “drops” the user in front of a fire scene with very little initial information. This situation closely mirrors what happens in real life—every scene develops from very little information at the start to a fuller picture at the end.

The open-ended approach allows the user to investigate the Scenario as they choose. However, this “wide open” approach can be overwhelming and the user may not know where to start or how to proceed. Therefore, some users may want a more directed path to follow. This section provides three Learning Pathways through the Scenario for three different types of users and learning objectives. These Pathways, and recommendations on who should use them and when they are appropriate, are summarized in the following chart:

<table>
<thead>
<tr>
<th>LEARNING PATHWAY</th>
<th>SUGGESTED LEVEL OF INVESTIGATOR EXPERIENCE</th>
<th>SUGGESTED LEVEL OF FAMILIARITY WITH interFIRE VR SOFTWARE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Pathway 1: Tips</td>
<td>Very Experienced</td>
<td>Familiar</td>
</tr>
<tr>
<td>Learning Pathway 2: User-Determined</td>
<td>Experienced</td>
<td>Unfamiliar</td>
</tr>
<tr>
<td>Learning Pathway 3: Directed</td>
<td>Less Experienced</td>
<td>Unfamiliar</td>
</tr>
</tbody>
</table>

Thus, Learning Pathway 1 is most suitable for experienced investigators who thoroughly understand how the software works and know how to implement the actions they want to take using the software controls. Learning Pathway 2 is most suitable for investigators who have experience in actual fire investigations, but are unsure how to implement what they want to do in the interFIRE VR software. Learning Pathway 3 is most suitable for less experienced investigators who are unfamiliar with the software and want a step-by-step tutorial of how to work the Scenario. However, any user is free to try any of the Learning Pathways.

No matter which Learning Pathway you choose, consider keeping a notebook where you can write the details of the incident and any investigative leads uncovered. This notebook can be a valuable “off the computer” resource for putting together the case. You may wish to split the notebook into sections, such as “Witnesses,” “Evidence,” “Accidental Causes,” “Leads to Follow Up,” “Insurance/Financial Information,” or other categories.

**Learning Pathway 1: Tips**

For users who have good facility with the software and a strong grasp of the investigative actions that must be taken at the scene, this learning pathway provides five “tips” for solving the virtual reality fire investigation.

**TIP #1: THE CANINE UNIT.** Look at the pattern of the Accelerant Detection Canine Unit hits as an indication of a possible ignitable liquid pour pattern (pending lab tests). Outside the room of origin, stringing together the path between canine hits may show you the path of ingress and/or egress. Then, examine doors and other objects near these hits, as they may also contain evidence.

![AT RIGHT: “Dispatch Canine Unit” Main Interface](image)
TIP #2: DAMAGE PATTERNS. To find the area of origin, examine the damage patterns on the couch and the coffee table. Compare the degree of damage on the front right leg of the couch with the front left leg of the couch. Observe how the damage progresses along the couch. Compare the damage on the four feet of the coffee table. Which one(s) is most damaged? What does that tell you about the fire?

AT RIGHT: Observing Damage Patterns

TIP #3: CONDITION OF THE LIVING ROOM. When the residents return to the scene for an interview, question them about the arrangement of furniture and appliances in the living room. Ask them to walk through the scene with you and point out anything that is out of place. Compare their statements with the condition the living room was found in. What inconsistencies are there?

AT RIGHT: Tenant Walkthrough

TIP #4: FINANCIAL AND INSURANCE INVESTIGATION. Financial problems can be a motive in cases of incendiary fire. Ask involved parties, such as the owner and renters, about financial and insurance matters. Compare their statements to insurance documentation and financial documentation available in the Follow-Up investigation. What inconsistencies, if any, emerge?

AT RIGHT: Follow-Up Investigation – Financial Records

TIP #5: DOORS AND WINDOWS. If your investigation determines that the fire is of incendiary cause, one of the questions you will need to ask is how access was gained to the building. To explore this in this Scenario, examine every door and window in the home, ask the first-in firefighter how the fire department’s initial access was gained, and be sure to interview the jogger and the tenants about how they left the house. Note the condition of all doors and windows in your diagram.

AT RIGHT: Master Case File Diagram

For more ideas on how the experienced investigator can get the most out of interFIRE VR, turn to Section 8: InterFIRE VR for Experienced Investigators.
**Learning Pathway 2: User-Determined**

This Learning Pathway explains how to use the interFIRE VR software controls to implement the most common investigative actions. For best results, the order of these actions should be consistent with the fire investigation protocol explained in the Tutorial. However, you are free to try any sequence of investigative actions. Below, you will find an explanation of how to implement each common investigative action. All instructions assume that you begin on the main Scenario screen, where the virtual reality scene is shown.

This Pathway will also be the most applicable for experienced investigators and students using interFIRE in a classroom setting where the Learning Plan and the instructor are driving the student’s work.

If you want to **ESTABLISH A PERIMETER AT THE SCENE:**

1. Click the “Pointing Finger” (Give Instructions) button on the Toolbar.
2. Select “Secure Scene.”
3. Select “Define Perimeter Area.”
4. Select the perimeter size you want, “House,” “Yard,” or “Block,” then click “Establish Perimeter.” If the perimeter you select is not supported by the current facts in your investigation, you will be corrected and prompted to make another selection.

If you want to **SPECIFY A DOOR FOR SCENE ACCESS:**

1. Click the “Pointing Finger” (Give Instructions) button on the Toolbar.
2. Select “Secure Scene.”
3. Select “Specify Door for Scene Access.”
4. Move your mouse over the diagram and you will see each possible door highlight. Click on the door you want to set. If the door you selected is not the best choice at this scene, you will be corrected and prompted to make another selection.

If you want to **SECURE WITNESSES SO THEY DO NOT LEAVE:**

1. Click the “Pointing Finger” (Give Instructions) button on the Toolbar.
2. Select “Secure Scene.”
3. Select “Secure Witnesses.”
4. Read the message.
If you want to **INTERVIEW A PROFESSIONAL** (including the INCIDENT COMMANDER, FIRST RESPONDING UNIT, and FIRST-IN FIREFIGHTER):

1. Click the “Badge” (Consult Professionals) button on the Toolbar.
2. Select the Professional you want to interview (Incident Commander, First Responding Unit, or First-In Firefighter). You must interview the Incident Commander first, as you should do in any fireground investigation.
3. Select any question from the list and view the Professional’s response. As you ask questions, new questions may appear on your list, thereby allowing you to follow lines of questioning.
4. To navigate through pages of questions, use the MORE> and <BACK buttons at the bottom of the questions box.

If you want to **WALKTHROUGH THE SCENE WITH THE FIRST-IN FIREFIGHTER**:

1. Click the “Badge” (Consult Professionals) button on the Toolbar.
2. Select the First-In Firefighter.
3. Select “Request a Walkthrough With the First-In Firefighter.”
4. Select the room you are interested in (you may choose to start with Entry and follow the path the fire service took through the house).
5. Ask any question about the room from the list and view the First-In Firefighter’s response. You may walk through any room using the menu.
6. To navigate through pages of questions, use the MORE> and <BACK buttons at the bottom of the questions box.

If you want to **CONDUCT A CANVASS**:

1. Click the “Pointing Finger” (Give Instructions) button on the Toolbar.
2. Select “Direct Canvass.”
3. Choose one of the three types of canvasses: “Crowd,” “Block,” or “Streets Nearby.”
4. Click “Assign Officer Jones.” Officer Jones will then go off to complete the canvass task you have assigned.

A period of time will elapse before Officer Jones returns with the results of the assigned task. You will be notified by dialog box or by text message on the main interface when Officer Jones has returned with information. Once Officer Jones has returned, you may come back to the Direct Canvass screen and send him to canvass another area.
If you want to LOCATE PERSONS OR WITNESSES:

There are two ways to find witnesses. One, the witness may be automatically added to your menu if another witness mentions them and the witness is at the scene or if they are found as a result of a canvass. Two, you may send a member of your investigative team to locate a person you know exists, but do not necessarily know who or where they are, such as the owner of 5 Canal Street. To send a team member to locate a person:

1. Click the “Pointing Finger” (Give Instructions) button on the Toolbar.
2. Select “Locate Person.”
3. Check off the person you want your team member to locate.
4. Click “Send Officer Smith to Find This Person.”

A period of time will elapse before Officer Smith returns with the results of the assigned task. You will be notified by dialog box or by text message on the main interface when Officer Smith has returned with information. It may take some time for certain witnesses to reach the scene, just like in real life. You should use the time to conduct other investigative duties. Once Officer Smith has returned, you may come back to the Locate Person screen and send him back out to locate another person.

It is good practice to check the Locate Person menu often, as people may be added to it as you move along in your investigation. In addition, make sure you thoroughly read the notification boxes when team members return so you can understand who is being added to what menus.

You may wish to begin the origin and cause determination as the two officers are searching to find specific witnesses or are canvassing the area.

If you want to INTERVIEW A WITNESS:

1. Click the “Interviewer” (Interview Witness) button on the Toolbar.
2. Select the Witness you want to interview.
3. View the introductory screen for that witness. Click “Begin the Interview” to begin.
4. Select any question from the list and view the Witness’ response. As you ask questions, new questions may appear on your list, thereby allowing you to follow lines of questioning.
5. To navigate through pages of questions, use the MORE> and <BACK buttons at the bottom of the questions box.

The witness’ responses to your questions are compiled in a witness statement, which is accessible under the “File Folder” (Review Case File) button on the toolbar. The more comprehensive your witness interviews are, the more information you will obtain to help you understand possible fire causes, the condition of the fire building before and after the fire, possible arson motives, and other important information.

If you are unsure how to find witnesses, see the LOCATE PERSONS OR WITNESSES section.
It is good practice to check the Witness menu often, as people may be added to it as you move along in your investigation. In addition, make sure you thoroughly read the notification boxes when team members return from tasks so you can keep up to date on who has been identified for an interview. Be sure to follow up on what witnesses tell you, be it about people or about events.

If you want to RE-INTERVIEW A WITNESS:

1. Click the “Interviewer” (Interview Witness) button on the Toolbar.
2. Select the Witness you want to interview.
3. View their introductory screen. Click “Begin the Interview” to begin.
4. Select any question from the list and view the Witness’ response. As you ask questions, new questions may appear on your list, thereby allowing you to follow lines of questioning.
5. To navigate through pages of questions, use the MORE> and <BACK buttons at the bottom of the questions box.

You may re-interview witnesses at any time. Once you successfully close the scene investigation and move to the follow-up, you will not be able to interview witnesses again.

The witnesses’ responses to your questions are compiled in a witness statement, which is accessible under the “File Folder” (Review Case File) button on the toolbar.

It is good practice to check the Witness menu often, as people may be added to it as you move along in your investigation. In addition, make sure you thoroughly read the notification boxes when team members return from tasks so you can keep up to date on who has been identified for an interview. Be sure to follow up on what witnesses tell you about people or about events.

If you want to REVIEW A WITNESS STATEMENT:

1. Click the “File Folder” (Review Case File) button on the Toolbar.
2. Select “Witness Statements.”
3. Select the Witness whose Statement you want to review.
4. Use the scrollbar to review the statement. The paraphrased responses are placed on the statement in the order you asked the questions.

If you return to the Interview Witness section and ask more questions of a witness, the answers to those questions will be added to the Statement.
If you want to **MOVE THROUGH AND AROUND THE HOUSE**:

When your cursor is “at rest” (no mouse button pressed) over the VR scene, it looks like a target.

1. On the main screen, place your mouse over the VR scene. Hold down the left mouse button and move the mouse from side to side and up and down (the cursor will change to a thin arrow). This will turn around the VR scene and tilt it up and down. You will move in the direction the arrow points. You can also zoom in and zoom out in the VR scene using the SHIFT button on the keyboard (zoom in) and the CTRL button on the keyboard (zoom out). Experiment with these movements for a few minutes so you understand how to move around the fire scene easily.

2. When you want to examine an object in the VR, let go of the mouse button and slide the mouse around the object. When you see your cursor change to a hand, you can click there for a closer look. This will bring up either a text message below the VR box or will take you to a new screen with that object on it and a number of choices for views of the object and other actions.

3. When you want to move to another location in the VR scene, for example from the kitchen to the dining room, use Step 1 to position the VR facing the way you want to go. Then, release the mouse button. Move your mouse around the picture. When you see your cursor change to a thick arrow, click there to move to that location in the VR scene.

If you want to **EXAMINE AN OBJECT OR AREA**:

1. When you want to examine an object or area in the VR, let go of the mouse button and slide the cursor over the object. When you see your cursor change to a hand, you can click there for a closer look. This will bring up either a text message below the VR box or will take you to a new screen with that object on it and a number of choices for views of the object and other actions.

2. When you want to move to another location in the VR scene, for example from the kitchen to the dining room, position the VR facing the way you want to go. Then, release the mouse button. Move your mouse around the picture. When you see your cursor change to a thick arrow, you can click there to move to that location in the VR scene.

3. You may zoom in or out for a closer look within the VR scene. To zoom in, use the SHIFT key on your keyboard. To zoom out, use the CTRL key. You may zoom in or out while moving or while stationary.

Practice these actions for a few minutes to see how easy it is to move around the inside and outside of the fire building.
If you want to **TAKE A PHOTOGRAPH**:

**IN THE VR SCENE:**
1. If you want to take a photograph in the VR scene, move to the area and angle you want to photograph.
2. Click the “Camera” (Photograph) button in the Toolbar.
3. If it is the first time you have taken a photograph, you will see an information screen on how photographs work. If it is not, you will just hear the shutter click and the photograph will be saved. All photographs can be viewed by clicking on the “File Folder” button (Review Case File).

Document the evidence thoroughly, but with economy. You are limited to two rolls of 36 exposures (72 pictures). If you run out of film, you will not be able to collect additional evidence you may discover.

**ON OTHER SCREENS:**
1. On other screens, such as items accessed from the VR “hotspots,” you will see a Photograph button like the one in the toolbar. Click this button to take a photograph of that view of the item.
2. If it is the first time you have taken a photograph, you will see an information screen on how photographs work. If it is not, you will just hear the shutter click and the photograph will be saved. All photographs can be viewed by clicking on the “File Folder” button (Review Case File) on the Toolbar.

Please note that the first step of Evidence Collection is to take a photograph, so there is no need to double photograph an item you will be collecting.

Remember, you only have 72 photographs, so use them wisely. You can always see the number of photographs you have left if you move your mouse over the “Camera” (Photograph) button in the Toolbar. If you use up all your photographs, you will not be able to collect any more evidence because you can’t photograph it.

If you want to **REVIEW YOUR PHOTOGRAPHS** or **MAKE NOTES ON A PHOTOGRAPH**:

1. Click the “File Folder” (Review Case File) button on the Toolbar.
2. Select “Photographs.”
3. Your photographs appear in the order you took them. To move through photographs, use the arrows. To enter notes on any photograph, click on the text box and type your comments. These comments will be saved with the corresponding photograph.
If you want to **USE THE ACCELERANT DETECTION CANINE UNIT (AK-9)**

1. Click the “Dog” (Canine Unit) button on the Toolbar.
2. Select the Structure Level (Exterior Grounds, Basement, First Floor, or Second Floor). This will bring up the floor plan for that level.
3. Mouse over the rooms/locations on that level. Click on the room/location you want the canine to search.
4. Follow the canine on the search of that room/location. If there are any canine alerts, you will be prompted to collect samples from those alerts (see COLLECT EVIDENCE FROM THE CANINE UNIT SEARCH).
5. After completing a room/location, you may return and have the AK-9 Team search additional rooms/locations at any time.

If you want to **COLLECT EVIDENCE:**

**FROM THE VR SCENE:**
1. Select the item you want to collect (see EXAMINE AN OBJECT OR AREA).
2. Click the evidence collection phrase, (i.e., “Collect this Item as Evidence”).
3. Follow the eight-step evidence collection process described below.

**FROM THE CANINE UNIT SEARCH:**
1. After the AK-9 searches the room (see USE THE ACCELERANT DETECTION CANINE UNIT), you will be prompted to collect samples from any alerts. Select the button to collect the sample.
2. Follow the eight-step evidence collection process described below.

**EVIDENCE COLLECTION PROCESS**
**STEP 1:** Photograph the item. Click “CLICK TO SNAP THE PHOTOGRAPH.”
EVIDENCE COLLECTION PROCESS
STEP 2: Change your gloves. Click “CLICK TO CHANGE YOUR GLOVES.”

EVIDENCE COLLECTION PROCESS
STEP 3: Select an appropriate container to place the item or sample in, then click “Submit Choice.” Only certain containers are permissible, depending on the item or sample. If you make an incorrect selection, you will be prompted to choose again.

EVIDENCE COLLECTION PROCESS
STEP 4: Select a tool to collect the item or sample with, then click “SUBMIT CHOICE.” Certain tools are more appropriate depending on the item or sample. If you make an incorrect selection, you will be prompted to choose again.

EVIDENCE COLLECTION PROCESS
STEP 5: The process of filling the container and sealing it is explained. Then, click to “LABEL THE ITEM.”
EVIDENCE COLLECTION PROCESS
STEP 6: Label the item. The Exhibit #, Description, and Location are automatically filled in. You must specify the lab tests you want performed by clicking to check them off. Multiple selections are possible. Do not rush this decision-making process. Think through each piece of evidence and what forensic analysis might be done. For example, if you have collected a container you suspect may have ignitable liquid residue, also request a fingerprint examination on the container, as latent fingerprints may have been deposited by a suspect. When you have finished selecting tests, click “Submit Label and Test Request.” Only certain lab tests are appropriate for an item or sample. If you make an incorrect selection, you will be prompted to choose again. As in the real world, you should not order all possible tests, only specify the tests that are the most appropriate for the type of evidence.

EVIDENCE COLLECTION PROCESS
STEP 7: Confirm the labeling of the item by clicking “Proceed to Scene Diagram.”

EVIDENCE COLLECTION PROCESS
STEP 8: Place an evidence marker on the scene diagram where you took the sample. To place the marker, press and hold down the mouse button over the orange cone. Drag the cone over the diagram and drop it (by releasing the mouse button) on the location in the diagram where you took the evidence from. The cone will drop there and will automatically be numbered with the correct Exhibit number in your crime scene drawing.

Please note, YOU CAN ONLY COLLECT 20 ITEMS OF EVIDENCE. This is to simulate the resource restraints that investigators face in the field. Make sure you manage your evidence collection wisely by collecting important evidence that helps you establish the corpus delicti (cause and responsibility) for the fire.

When you reach the Follow-Up Investigation (after you have successfully closed the scene investigation), you will receive lab results for each test you order.
If you want to REVIEW YOUR EVIDENCE LOG and/or CHANGE THE TESTS YOU HAVE ORDERED:

1. Click the “File Folder” (Review Case File) button on the Toolbar.
2. Select “Evidence Log.”
3. Here, you can view a summary of the evidence you have collected and the tests you have ordered. If you want to CHANGE THE TESTS, click on the tests requested for that item in the list. This will return you to the labeling step in the Evidence Collection process. Check and uncheck tests as you wish. Click “Proceed” to return to the Evidence Log.

If you want to USE THE SCENE DIAGRAM:

1. Click the “File Folder” (Review Case File) button on the Toolbar.
2. Select “Diagram.”
3. To select a floor level, choose “Basement,” “First Floor,” or “Second Floor.” The Exterior of the scene is part of the First Floor level.
4. Any markers you have placed through evidence collection will already be on the diagram. You should always place orange cones through the Evidence Collection process (see COLLECT EVIDENCE).
5. You may use the other icons, “Condition: Open and Unlocked” and “Condition: Closed and Locked” to document the security status of the fire building’s doors and windows. To do this, grab a marker by pressing and holding down the mouse button over either the “Closed” or the “Open” icon. Drag the icon over the diagram and drop it by releasing the mouse button on the door or window you have examined. This process keeps your crime scene diagram continually updated as you document the security of the 5 Canal Street windows and doors.
6. You may also view the dimensions of key rooms using the “Click for Dimensions” button.

When you are ready to MAKE YOUR ORIGIN AND CAUSE DETERMINATION:

1. Make sure you have conducted all the on-scene investigative actions required. Once you successfully close the scene, you will not be allowed to return.
2. Click the “Close Scene Investigation” button on the Toolbar.
3. You will then be asked if you want to Wash the Floor before you leave. It is recommended that you do wash the floor before leaving the fire scene. This process will provide a better opportunity to view and document unusual patterns on floor surfaces, identify and document protected areas, and may expose items of potential evidentiary value not previously observed. Photos of the washed floor may also be a valuable piece of demonstrative evidence an expert witness may refer to and use to support his or her testimony.
4. Then, you will be asked to make a Cause and Origin determination and support it with factors you observed at the scene. You will only be allowed to advance to the Follow-Up Investigation if you identify the correct factors and items of evidence that led you to a specific Cause and Origin Determination. If you make an incorrect determination, you will be returned to the scene for further investigation.

Remember, in this fire scene investigation exercise, as in a real fire investigation, you must base your scene classification on physical evidence and first hand accounts that corroborate the existence of evidence or some condition (i.e. a locked door had been forced opened by a would-be rescuer) justifying a conclusion (the building had been secure).

THE FOLLOW-UP INVESTIGATION

In the Follow-Up Investigation, you will be able to review Lab Reports, Fire Incident Reports, Police Reports, Insurance Documents, Financial Records, and other items as you prepare a case for presentation to the Virtual Prosecutor.

When you are ready to make your case conclusions, you will answer five Case Summary questions and then proceed to the Virtual Prosecutor. Take the time to fully explain all of the factors that you would cite if you had to write a comprehensive report and testify on the witness stand in a criminal trial as an expert and the lead investigator of the 5 Canal Street fire.

At the end of the investigation, you will have the opportunity to compare your responses against the “Virtual Prosecutor,” who knows every detail of the origin and cause and criminal investigation. This will enable you to see if you missed any important clues or if you “nailed” the case. You will also see, point-by-point, how you performed on the “Status Bar” requirements of the protocol. Each point will explain the advantage of a particular step in the investigation, and explain how you performed in executing that step. For more on how to interpret the Virtual Prosecutor Feedback, see Section 5: Understanding the Virtual Prosecutor Feedback.
Learning Pathway 3: Directed

Learning Pathway 3 is a step-by-step walk-through that applies the Tutorial fire investigation protocol to the Scenario virtual reality investigation. Learning Pathway 3 is a good choice for:

- Users and students who are less experienced fire investigators and need a step-by-step protocol.
- Users with a limited understanding of how the interFIRE VR software works.
- Anyone who wants to practice applying the Team Concept and following the fire investigation protocol outlined in the Tutorial.
- Professionals who are not fire investigators, but are involved in the fire investigation process, such as attorneys, first responders, and insurance adjusters.

STEP 1: REVIEW THE TUTORIAL

It is recommended that you review the Tutorial before you begin the Scenario. Follow the flow chart in order, understanding the stages in a systematic fire investigation. Review as much supporting information in the Resource File as possible.

STEP 2: SELECT THE SCENARIO AND READ THE GAMEPLAY

Select “The Scenario” from the main menu. On the first screen, review the “Investigative Gameplay Description” to understand the organization of the Scenario and how its major functions are controlled. When you have finished, click “Answer the Call” and listen to the basic information provided by the dispatcher to you as principal investigator.

STEP 3: CONSULT PROFESSIONALS

When you arrive at the fire scene, you will automatically be prompted to consult the Incident Commander first and then speak to the first responders. To do this, follow this procedure:

1. On the “Consult Professionals” screen, click “Incident Commander,” then click on the questions on the right to ask them of the Incident Commander. Listen to the responses and write down all pertinent information in your off-computer notebook.
2. When you have finished interviewing the Incident Commander, click “Consult Another Professional” in
the lower right-hand corner of the screen. Now, interview both the First Responding Officer and the First-In Firefighter in the same way.

3. On the screen for the First-In Firefighter, you may also “Request A Walkthrough With the First-In Firefighter” at this time, or wait until you have viewed the scene first. This walkthrough will allow you to ask questions about the various areas of the house and what the first-in firefighter observed when entry was made.

4. When you have finished interviewing all professionals, click “Return to Scene” on the “Consult Professionals” main screen. This will bring you back to the main virtual reality screen.

**STEP 4: UNDERSTAND HOW THE SCENE INVESTIGATION WORKS**

Before you begin taking investigative actions at the scene, click the “? HELP” button in the toolbar at the bottom of the “5 Canal Street Scene Investigation” main frame, hereafter referred to as “MAIN.” This Help frame explains the technical aspects of how the features of the software are used to execute investigative actions.

This screen also explains the Status Bar, which is tracking your progress in the Scenario investigation. Thoroughly review this text before continuing. Refer to this screen any time you want to know how to execute a common investigative action. Or, you may also refer to Scenario Learning Pathway 2. When you have finished, click “Return to Scene.”

--- PAUSE AND DECIDE HOW TO CONTINUE ---

At this point, pause and consider if you want to now try the scene investigation on your own. If you do, do not read further because the following steps will walk you through the main Scenario actions. After you attempt the investigation on your own, return to this point in the Guide and start a new investigation, following the protocol outlined below. Compare that approach to the approach you took on your own. How closely did your process follow the recommended one? What were the advantages of the recommended protocol? What additional things did you learn from the recommended protocol? How did your theory change? How will you modify your approach in light of this recommended protocol?

If you want to continue with the step-by-step walkthrough at this time, read on.

**STEP 5: SECURE THE SCENE**

When you first begin the Scene Investigation, you may be tempted to plunge right into the origin and cause examination and begin recovering evidence. In this exercise, as in a real fire investigation, you must first secure the scene and witnesses, or risk having physical evidence contaminated and witnesses leaving the scene. These two actions are very important and failure to properly complete these actions can jeopardize the investigation. Review the Tutorial protocol if you have any questions about the importance of these actions.

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*above: “Help” Screen

*above: Securing the Scene*
To properly secure the scene in the virtual reality investigation:

1. From MAIN, click the “Pointing Finger” (Give Instructions) button.
2. Select “Secure Scene.”
3. Click on and execute each action on this screen, beginning with “Define Perimeter Area,” then “Secure Witnesses,” then “Specify Door for Scene Access.” Further information on how to do this is in Learning Pathway 2. If you are unsure what door to restrict access to, find out from the First-In Firefighter which door was used to make entry. To do this, return to MAIN, select the “Badge (Consult Professionals),” then “First-In Firefighter,” then “Request A Walkthrough with the First-In Firefighter.” Observe which areas are most damaged. The most damaged area in a fire is often the fire’s origin. The origin area usually contains the most productive evidence of causation and criminal activity; thus this area should be restricted until the investigator has sized-up the situation. Do not choose a door that directly accesses this area because you do not want evidence trampled or tracked around. Also, consider which door is most convenient for the investigative team to use, and balance these two factors in your choice of scene access door.

STEP 6: PUT THE TEAM TO WORK

For best results, a fire investigation should implement the “Team Concept,” as outlined in the Tutorial. Although interfIRE VR acknowledges that there are circumstances in which investigators work alone, the “Team Concept” is recommended to maximize safety and maximize the probability that the case will be solved.

In the Scenario, you direct every stage of this investigation as if you are the lead investigator. Therefore, you have been given two police officers to assist you with some investigative tasks. Put them to work as soon as you can. Two critical tasks for these officers are to canvass the area (most important information will likely come from people closest to the scene) and locate persons for interview. To assign officers to these tasks, do the following:

DIRECT CANVASS

1. From MAIN, select the “Pointing Finger (Give Instructions)” button, then select “Direct Canvass”.
2. Assign Officer Jones to canvass one of the possible locations. After you make this assignment, it will take some time for Officer Jones to complete it. You will be notified on MAIN when he has results for you.
3. Then, return to the “Direct Canvass” screen and send Officer Jones out again to canvass a different area.
4. Repeat this process until all canvasses are complete.

LOCATE PERSONS

1. The second officer will help locate a number of witnesses you want to talk to. Select “Locate Person” from the “Give Instructions” screen.
2. Send Officer Smith to find one of the people listed. You may wish to start with the injured passerby jogger who was taken to the hospital, as the First Responding Officer informed you. Again, it will take time for Officer Smith to complete the assigned task. You can keep track of the time using the clock at the top right of the screen. When Officer Smith returns, you will be notified on MAIN.
3. Then, send her to find another person. Repeat this process until all persons have been located. The list of persons you can send Officer Smith to find will grow as you
investigate the scene and talk to witnesses. Check back on the “Locate Person” screen often to see your options. Keep track of this activity in your off-computer notebook.

STEP 7: CONDUCT PRELIMINARY SCENE ASSESSMENT (SIZE-UP)
Before conducting the preliminary scene assessment, make sure you have spoken to all the responding professionals and walked through the scene with the First-In Firefighter. To conduct the walkthrough:

1. Click “Badge (Consult Professionals)” on MAIN, select “First-In Firefighter” and select “Request Walkthrough with the First-In Firefighter.”
2. On the map of the home, select each room and then ask the First-In Firefighter questions about his observations and actions at the scene.
3. When the walkthrough is finished, return to MAIN.

When you have completed the walk-through, use the Virtual Reality scene to get a first-hand look at the incident. To do this:

1. On MAIN, place your cursor over the VR box and hold down the left mouse button.
2. Slide the mouse from side to side and up and down to turn around in the scene. This will allow you to observe all areas of the room you are in from a wide angle.
3. To view individual objects and areas in the room, release the mouse button and move the mouse over the VR box. When the cursor changes to a “hand,” click there to view that area in more detail. Right now, you do not want to go into too much detail; you just want an overall understanding of the scene and the fire flow.
4. To move to another part of the scene, move the mouse around over the VR box without the mouse button down. When the cursor changes to a “thick arrow,” click there to move in that direction. Go throughout the house, on both floors and in the basement. Go out through the garage and into the backyard.

In the preliminary scene assessment, do not confine your attention to just the fire building. In every crime scene, the perpetrator must approach from somewhere to gain entry and then leave by an escape route. These pathways often contain critical evidence discarded by the criminal.

Make notes in your off-computer notebook as your investigation progresses.

STEP 8: INTERVIEW THE FIRST WITNESS
Now that you have a good overall picture of the scene, start interviewing witnesses. From MAIN, select “Interviewer (Interview Witnesses).” This will bring you to a menu of witnesses that you may interview. The only witness you can initially interview is the E911 caller, Mary Gilbert, who lives next door to the fire building. In many real-life investigations, the E911 caller is sometimes the only known early witness. These early witnesses are often critical because they were usually close to the fire and many have details on how it started, what caused it, and who else was present.
This menu of witnesses will grow as you investigate the scene and identify more witnesses, either through your own interviews or completion of assignments you give to the two police officers. Check the witness menu often, especially after notifications that witnesses have arrived.

Begin by interviewing Mary Gilbert, the neighbor. To do this:

1. Click on her picture on the “Interview Witnesses” screen.
2. Review the information provided, then click “Begin the Interview.”
3. Click on questions to ask them and note the witness’ responses, paging through pages of questions with the “MORE>” and “<BACK” buttons.
4. As you ask questions, the witness’ responses will compile in a written Witness Statement. View this witness statement from MAIN by selecting “Pen and Paper (Review Case File)” then “Witness Statements,” then the Witness’ name. Comparing witness statements will allow you to corroborate accounts.

**STEP 9: SIZE-UP THE FIRE SCENE AND BEGIN DOCUMENTATION**

After you make your preliminary assessment and conduct initial witness interviews, begin to document the fire scene. Documenting provides a visual and written record of the investigation that will be referred to again and again as the investigation progresses and the case comes to trial. First, take overall photographs of the exterior and interior of the building before anything is disturbed. To do this:

**PHOTOGRAPHS**
1. Navigate to the area in the VR scene that you want to photograph (see Step 7 for directions).
2. Click the “Camera (Photograph)” icon when you want to take a picture of the area or item you are viewing. Remember you are limited to 72 photographs. Use them wisely and save at least 20 pictures to use when you collect specific pieces of evidence during the investigation. The number of photographs you have left will display whenever you mouseover the “Camera (Photograph)” button on MAIN.
3. To review your photographs, click the “Pen and Paper (Review Case File)” button on MAIN and then select “Photographs.” You can review all your photos and make notes on them by typing in the box provided.

During this size-up, determine the security condition of all doors and windows that provide access to the fire building. Note the condition of these doors and windows on your Scene Diagram by doing the following:

**DIAGRAM**
1. Select “Diagram” from the “Review Case File” screen.
2. To note the condition of doors and windows, drag and drop either an “Open and Unlocked” or a “Closed and Locked” icon over each door and window on the diagram.
3. As you collect evidence, you will also drop evidence markers on this diagram. See Step 10 for more information on the evidence collection procedure.
STEP 10: EXAMINE THE SCENE, ELIMINATE ACCIDENTAL CAUSES AND BEGIN COLLECTING EVIDENCE

By this point, you should have begun to develop an emerging picture of the incident, the persons involved, and what further investigative leads you need to pursue. Now, most of your work will be focused on interviewing witnesses as they arrive, performing a detailed examination of the scene, collecting evidence and documenting your work.

To examine the scene in detail, navigate the VR movie as described in Step 7. This time, focus on each “hotspot” (the areas where the “hand” cursor appears) and thoroughly explore each item in the room of origin. Trace the fire flow by examining damage on furniture, floors, and walls. Determine where the area of fire origin is, then examine potential accidental causes in that area, including lamps, wall outlets, and appliances. Document evidence of electrical failure, or lack thereof, with photographs.

Collect items of evidence using the following process:

1. Once you have navigated to the item in the VR, click the “Collect As Evidence” button on that item’s details screen.
2. Click through the screens to Take a Photograph and Change Gloves.
3. Make your choices on the next screens to select a container, select a collection tool, and select lab tests. Click on the box of the item you want to specify (container, tool, and tests), then click Submit to move to the next step. Enter pertinent information as directed on screen.
4. When prompted, drag and drop an evidence cone on the diagram at the location where you collected the evidence:
   4a. Select the floor you are on from the menu on the right.
   4b. Grab the cone by placing the cursor over the icon, pressing the left mouse button, then rolling the mouse until the icon is over the location where you collected the item.
   4c. Release the mouse button. The icon will drop and display the Exhibit Number for that piece of evidence. After you have dropped the evidence marker, click the button at the bottom of the screen to go on.

For a more detailed explanation of the evidence collection procedure, please see Learning Pathway 2.

The software keeps an Evidence log of all the items you collect. To review the Evidence Log:

1. From MAIN, click “Pen and Paper (Review Case File)”, then “Evidence Log.” You can then see all the information about the item collected.
2. If you want to change the tests requested, click on the test in the list, and then change your selections by clicking to check and uncheck the boxes. Then click “Submit Label and Test Request” to save your changes. Be judicious about the items you collect and the lab examinations you request. Remember, you are limited to 20 items of evidence. At the bottom of the Evidence Log, the number of lab credits tells you how many more items of evidence you can collect.

Take the time to really explore the scene, photographing and collecting as you go. Make notes in your off-computer notebook of leads to explore.
**STEP 11: EMPLOY CANINE UNIT**

In the course of the scene examination, make use of the Canine Unit at your disposal by clicking the “Dog (Call Canine Unit)” button on MAIN. Then, request that the canine unit search different areas of the scene by doing the following:

1. Select the general area of the location from the menu on the left (“Exterior Grounds”, “Basement”, “First Floor”, or “Second Floor”).
2. Select the room to search from the diagram on the right.
3. If the accelerant detection canine alerts at a location, collect a debris sample from that location using the button “Collect Evidence from the Canine Alert in this Room” so the laboratory can verify the alert with an ignitable liquids test. Then, continue with the Evidence Collection procedure described in Step 10.

**STEP 12: GO FOR IT!**

If you have followed the previous eleven steps, you now know how to do all the basic functions at the Scenario scene. Now, continue doing these actions—interviewing witnesses, examining items, collecting evidence, sending your officers to accomplish tasks, keeping your case file, documenting—until you have a hypothesis of causation supported by evidence. Keep track of your progress by monitoring green “ticks” on the Status Bar (further explained in Section 5: Understanding the Virtual Prosecutor Feedback). When you are ready, move on to the Follow-Up Investigation by clicking “Close Scene Investigation” on MAIN.

**STEP 13: SPECIFY ORIGIN AND CAUSE DETERMINATION**

Once you have clicked “Close Scene Investigation,” select “Yes” to wash the floor in the living room and examine any burn patterns revealed. To do this, navigate the VR movie as described in Step 7. Take photographs as necessary. When you are finished, click “click here to close the scene and make your origin and cause determination.” Make this determination by following these steps:

1. Select whether the cause was “Accidental”, “Incendiary”, or “Undetermined” by clicking on the appropriate button.
2. As directed on the screen, specify the factors and evidence that support your determination. If your determination is correct, you will move on. If not, you will receive corrective feedback and will be sent back to the scene for further investigation.
3. When you have established the cause and have properly supported it with facts, you will be asked to specify the origin. To mark the origin, drag the “Fire” icon over the area of origin by clicking and holding down the mouse button over the icon, dragging the mouse over where you think the origin is, and releasing the mouse button to drop the icon. If you are correct, the Fire icon will “stick” on the diagram. If you are incorrect, the icon will pop back to its original position. Continue attempting to specify the area of origin until the icon sticks.
4. After the Fire icon sticks, click “Record Origin and Move on to Follow-Up Investigation”.

**STEP 14: FOLLOW-UP INVESTIGATION**

In the Follow-Up Investigation, you can review your work at the scene and examine documentation collected in the Follow-Up phase. The buttons on this screen access the following information.

- Review the Case File you built at the scene by choosing “Photographs,” “Diagram,” “Witness Statements,” and “Evidence Log.”

- The results of the lab tests you ordered on collected evidence can be reviewed under “Lab Reports.”

- To review the reports filed by professionals who responded to the scene, select “Fire Incident Reports” and “Police Report.”

- To review possible financial motive for the fire, review the information under “Insurance Documents” and “Financial Records.”

- “Miscellaneous” contains some follow-up on a few additional items from the Scenario, depending on what actions you took at the scene.

While reviewing these documents, concentrate on matching physical evidence to witness statements to document evidence. Look for inconsistencies between one witness’ statement and other witness’ statements, physical evidence or document evidence.

Further refine your theory of the case, what happened, how the fire started, who was responsible, and what additional steps need to be taken in this case. Take notes in your off-computer notebook as necessary.

When you are ready to present your case to the Virtual Prosecutor, click “Case Summary” to proceed. You will be asked questions about your investigative conclusions, so make sure you are prepared!
STEP 15: VIRTUAL PROSECUTOR

Answer the five questions posed in the Case Summary by typing in the fields provided. Take your time with these answers; later on you will be able to analyze them in comparison to the “full and complete” answer from the “Virtual Prosecutor” who knows everything about the case. Take the time to fully explain all of the factors that you would cite in a comprehensive report and testify to on the witness stand in a criminal trial as an expert and the lead investigator of the 5 Canal Street fire.

At the end of the investigation, you will have the opportunity to compare your responses against the “Virtual Prosecutor,” who knows every detail of the origin and cause and criminal investigation. This valuable learning experience will enable you to see if you missed any important clues or if you “nailed” the case. You will also see, point-by-point, how you performed on the “Status Bar” requirements of the protocol. Each point explains the advantage of a particular step in the investigation.

When you have finished, “Submit Answers and Send Your Completed Case File to The Virtual Prosecutor for Feedback.” You will then be brought to the Virtual Prosecutor screen. For more information on how to interpret the results of your investigation, see the next section of this User’s Guide, Understanding the Virtual Prosecutor Feedback.
Once you reach the Virtual Prosecutor stage of the Scenario, the hard work is done. Now, the software has compiled for you a complete picture of your investigation at 5 Canal Street. This section of the User’s Guide details the components of the Virtual Prosecutor and explains how to interpret each piece of feedback.

You can print a composite of most of the Virtual Prosecutor feedback by clicking “Print Your Scenario Investigation Report” on the Virtual Prosecutor main.

NOTE: If you want to work the Scenario again without knowing “the answer,” do not view “The Origin,” “The Cause,” “Case Summary,” or “Case Solution” because these choices reveal the person who was responsible and how the fire occurred.

**Case File**

“Case File” contains all of the documentation you compiled during the course of the investigation: Photographs, Diagram, Witness Statements, Evidence Log, Lab Reports, Fire Incident Reports, Police Report, Insurance Documents, Financial Records, and Miscellaneous. You may want to refer to this Case File as you review the rest of the Virtual Prosecutor feedback.

The Case File will help you understand some of the elements of the incident, such as financial motive, that are listed in the Case Summary, as well as show how you fulfilled the Status Bar requirements. If you have an instructor, he or she may want to review your Case File with you to determine how well you covered certain areas, such as Photographs taken, Diagram notations made, questions asked of witnesses (and recorded in their Statements), and Evidence collected.

**“Status Bar” Results**

“Status Bar Results” details how you performed on each of the forty measures of how well you investigated the scene. This text file lists the Criteria, whether or not you met it, and why this action is important. In this feedback piece, you can also learn the investigative advantages of performing each of these steps.

Review this output and determine which areas you did not fulfill properly. Write down these areas in your off-computer notebook or on a sheet of paper. Then, refer to the chart below for the Tutorial modules that relate to the Status Bar criteria you did not fulfill. Review these Tutorial modules to improve your understanding of that topic. From the Tutorial screens, you may also Jump To the Resource File articles associated with that Tutorial section for additional, more in-depth information. These correlations are as follows:
<table>
<thead>
<tr>
<th>STATUS BAR CRITERIA</th>
<th>TUTORIAL SECTIONS TO REVIEW</th>
</tr>
</thead>
</table>
| 1. Interview the Incident Commander First | • Roll-Up > Contact the Incident Commander  
• Preliminary Scene Assessment > Get Basic Incident Information |
| 2. Interview First Responding Unit | • Preliminary Scene Assessment > Get Basic Incident Information  
• Witness Interviews > Conduct Interview and Re-Interview Witnesses |
| 3. Interview First-In Firefighter | • Preliminary Scene Assessment > Get Basic Incident Information  
• Witness Interviews > Conduct Interview and Re-Interview Witnesses |
| 4. Walk Through With First-In Firefighter | • Preliminary Scene Assessment > Walkthrough with First Respondent |
| 5. Setting the Point of Ingress/Egress | • Roll-Up > Preserve Scene and Physical Evidence  
• Roll-Up > Secure the Scene and Witnesses |
| 6. Setting the Perimeter | • Roll-Up > Preserve Scene and Physical Evidence  
• Roll-Up > Secure the Scene and Witnesses |
| 7. Inspect Security of Doors and Windows | • Preliminary Scene Assessment > Size-Up the Structure |
| 8. Right of Entry | • Preliminary Scene Assessment > Secure the Right to Enter |
| 9. Examine the Woods | • Fire Scene Examination > Examine the Scene and Analyze Fire Flow |
| 10. Exterior "Size-Up" | • Preliminary Scene Assessment > Size-Up the Structure |
| 11. Securing Witnesses | • Roll-Up > Secure the Scene and Witnesses |
| 12. Canvassing the Crowd | • Witness Interviews > "Work the Crowd" |
| 13. Canvassing the Block | • Witness Interviews > "Work the Crowd" |
| 14. Walkthrough with the Tenant | • Fire Scene Examination > Examine the Scene and Analyze Fire Flow  
• Witness Interviews > Conduct Interviews and Re-Interview Witnesses  
• Witness Interviews > Corroborate Information |
| 15. Location of Living Room Contents | • Fire Scene Examination > Examine the Scene and Analyze Fire Flow  
• Fire Scene Examination > Reconstruct Scene  
• Witness Interviews > Conduct Interviews and Re-Interview Witnesses  
• Witness Interviews > Corroborate Information |
| 16. Interviewing Tasha Gilbert (minor child) | • Witness Interviews > Approach the Witness  
• Witness Interviews > Secure Consent |
| 17. Photographing the Scene | • Fire Scene Examination > Document the Scene |
| 18. Tracking and Tracing Information from Witnesses | • Witness Interviews > Conduct Interviews and Re-Interview Witnesses |
| 19. Interviewing Material Fact Witnesses (Martin Wakiza, Mary Gilbert, Tasha Gilbert, Lily McCray, Dan Mezzi, Doron Ingram) | • Witness Interviews > Prioritize Witnesses  
• Witness Interviews > Approach the Witness  
• Witness Interviews > Secure Consent  
• Witness Interviews > Conduct Interviews and Re-Interview Witnesses  
• Witness Interviews > "Work the Crowd"  
• Witness Interviews > Prioritize Witnesses  
• Witness Interviews > Approach the Witness  
• Witness Interviews > Secure Consent  
• Witness Interviews > Conduct Interviews and Re-Interview Witnesses |
<p>| 20. Interviewing Fleeting Witness (Meghan Branigan) | • Witness Interviews &gt; Conduct Interviews and Re-Interview Witnesses |</p>
<table>
<thead>
<tr>
<th>STATUS BAR CRITERIA</th>
<th>TUTORIAL SECTIONS TO REVIEW</th>
</tr>
</thead>
</table>
| 21. Interview Owner (Steven Roberts) | • Witness Interviews > Conduct Owner Interview  
• Witness Interviews > Prioritize Witnesses  
• Witness Interviews > Approach the Witness  
• Witness Interviews > Secure Consent  
• Witness Interviews > Conduct Interviews and Re-Interview Witnesses |
| 22. Interview Tenant #1 (Paul Thomas) | • Witness Interviews > Prioritize Witnesses  
• Witness Interviews > Approach the Witness  
• Witness Interviews > Secure Consent  
• Witness Interviews > Conduct Interviews and Re-Interview Witnesses |
| 23. Interview Tenant #2 (Ruth Thomas) | • Witness Interviews > Prioritize Witnesses  
• Witness Interviews > Approach the Witness  
• Witness Interviews > Secure Consent  
• Witness Interviews > Conduct Interviews and Re-Interview Witnesses |
| 24. Canine Unit Search of Living Room  
25. Canine Unit Search of Outside Area | • Fire Scene Examination > Use Canine Units |
| 26. The Tire Print | • Fire Scene Examination > Examine the Scene and Analyze Fire Flow  
• Fire Scene Examination > Collect and Preserve Evidence > Impressions (Footprint, Tire Prints, Toolmarks) |
| 27. Bottle in the Woods | • Fire Scene Examination > Examine the Scene and Analyze Fire Flow  
• Fire Scene Examination > Collect and Preserve Evidence > Fire Debris (for ignitable liquids testing)  
• Fire Scene Examination > Collect and Preserve Evidence > Fingerprints |
| 28. The Fiber | • Fire Scene Examination > Examine the Scene and Analyze Fire Flow  
• Fire Scene Examination > Collect and Preserve Evidence > Fiber  
• Fire Scene Examination > Collect and Preserve Evidence > Fabric and Textiles |
| 29. The Space Heater  
30. The Outlet Behind the Couch  
31. The Boiler  
32. The Electrical Breaker Box  
33. The Extension Cord Cluster Plug  
34. The Lamp In the Corner  
35. The Electrical Appliance in the Northwest Corner  
36. The Duplex Outlet in the Northwest Corner | • Fire Scene Examination > Eliminate Accidental Fire Causes  
• Also access specific information on individual accidental causes by using the JUMP TO RESOURCE FILE button on this Tutorial screen. |
| 37. Washing the Floor | • Fire Scene Examination > Examine the Scene and Analyze Fire Flow |
| 38. Examining the Room of Origin | • Fire Scene Examination > Examine the Scene and Analyze Fire Flow  
• Fire Scene Examination > Document the Scene  
• Fire Scene Examination > Reconstruct Scene |
| 39. Photographing Key Items | • Fire Scene Examination > Examine the Scene and Analyze Fire Flow  
• Fire Scene Examination > Document the Scene |
| 40. The Scene Diagram | • Fire Scene Examination > Document the Scene |
The Origin

“The Origin” presents a diagram that shows the origin of the fire in comparison to where you placed your origin “Fire” icon. Compare your notation with the correct Origin. If you had difficulties specifying the origin, review the Tutorial sections “Fire Scene Examination > Examine the Scene and Analyze Fire Flow” and “Fire Scene Examination > Make Origin and Cause Determination.”

The Cause

“The Cause” presents the correct answers that support the cause determination. In addition, all of your attempts to specify a cause are appended into a text file. Here, you can view how your understanding of the cause developed, including incorrect determinations and the feedback you received on them. Use this section to more fully understand the mistakes and corrections you made to the cause determination to arrive at the correct one.

If you identify difficulties with understanding how to eliminate accidental causes, review the Tutorial section “Fire Scene Examination > Eliminate Accidental Fire Causes” and the Resource File material accessed from that screen. If you had difficulties specifying proper support for an incendiary cause determination, first review the feedback given in the text file compilation of your attempts. Then, review the Tutorial section “Fire Scene Examination > Make Origin and Cause Determination.” Finally, review the following topic-specific Tutorial sections:

- Roll-Up > Contact the Incident Commander
- Preliminary Scene Assessment > Get Basic Incident Information
- Fire Scene Examination > Examine the Scene and Analyze Fire Flow
- Fire Scene Examination > Use Canine Units
- Fire Scene Examination > Eliminate Accidental Fire Causes
- Witness Interviews > Conduct Interviews and Re-Interview Witnesses

Case Summary

“Case Summary” provides a side-by-side comparison of your responses to the five Case Summary questions with full and complete “model” responses from the “Virtual Prosecutor.” Compare your response to each question with the model response. What points did you correctly identify? What details did you miss? On what points were you incorrect?

For each question, the table below lists both Scenario Case File sections and Tutorial sections that will help support the specifics of the model answer in this case, as well as the general procedures used to arrive at the conclusion. The Scenario Case File sections can be accessed from the Virtual Prosecutor Main Screen by clicking on “Case File.”
<table>
<thead>
<tr>
<th>QUESTION</th>
<th>SCENARIO CASE FILE</th>
<th>TUTORIAL SECTION</th>
</tr>
</thead>
</table>
| 1. How did the fire at 5 Canal Street start?                           | • Lab Reports (especially for the canine alerts)  
• Photographs of the area of origin  
ALSO:  
• The Origin determination  
• The Cause determination                                                                                                                                                                                                 | • Fire Scene Examination > Examine the Scene and Analyze Fire Flow  
• Fire Scene Examination > Collect and Preserve Evidence > Fire Debris  
• Follow-Up Investigation > Interpret Forensic Lab Results > Fire Debris and Ignitable Liquids Classification table                                                                                                                                 |
| 2. Where did the fire originate inside 5 Canal Street and how did it develop? | • Lab Reports (especially for the canine alerts)  
• Photographs of the scene  
• Diagram of the scene, with doors and windows condition noted  
• Witness statements of Dan Mezzi, the jogger who attempted rescue,  
• Fire Reports, Police Report, and information from the Incident Commander, and the First-In Firefighter.  
ALSO:  
• The Origin determination                                                                                                                                                                                                 | • Fire Scene Examination > Examine the Scene and Analyze Fire Flow  
• Fire Scene Examination > Collect and Preserve Evidence > Fire Debris  
• Follow-Up Investigation > Interpret Forensic Lab Results > Fire Debris and Ignitable Liquids Classification table                                                                                                                                 |
| 3. What is the cause of the fire at 5 Canal Street and what evidence supports this cause determination? | • Lab Reports for fire debris, door ways and locks, and possible ignitable liquid containers and wrappers  
• Evidence Log of physical evidence recovered  
• Photographs, especially of the elimination of accidental causes, including the space heater  
• Lab Reports for canine alerts  
• Diagram of the scene, with doors and windows condition noted  
• Witness Statements from the owner (Steven Roberts), the tenants (Paul and Ruth Thomas), and the jogger (Daniel Mezzi) about the condition of the structure before the fire, their actions at the time of the fire, the condition of doors and windows in the structure, and the individuals with key access to the home.  
• Fire and Police Reports of first responder activities  
ALSO:  
• The Cause determination                                                                                                                                                                                                 | • Fire Scene Examination > Examine the Scene and Analyze Fire Flow  
• Fire Scene Examination > Collect and Preserve Evidence  
• Follow-Up Investigation > Interpret Forensic Lab Results  
• Fire Scene Examination > Eliminate Accidental Causes  
• Witness Interviews > Conduct Interviews and Re-Interview Witnesses                                                                                                                                                     |
| 4. Who set this fire and what evidence supports your conclusion?         | • Evidence Log of physical evidence recovered  
• Lab Reports, especially of fire debris and possible ignitable liquid containers and wrappers  
• Lab Reports of trace evidence and fingerprints found at the scene  
• Financial Investigation records                                                                                                                                                                                                 | • Witness Interviews > Conduct Interviews and Re-Interview Witnesses  
• Witness Interviews > Conduct Owner Interview  
• Follow-Up Investigation > Interpret Forensic Lab Results  
• Follow-Up Investigation > Consult Financial Investigation records                                                                                                                                                   |
“Case Solution” plays a reenactment of how the fire occurred. Watch this video and think critically about how your theory of the case compares to what actually happened.

- How does your sequence of events preceding and after ignition compare to the actual sequence of events?
- How does your origin and cause determination compare to what you see in the video?
- How did the canine alerts, physical evidence recovered, and damage patterns observed compare to the effects of the actions at the time of fire ignition?
- How did your theory of how the fire started compare to what actually happened?
- How did your elimination of accidental causes compare to potential accidental causes seen in the video?
- How does your determination of who was responsible compare to who was actually responsible?
- How does the physical evidence deposited at the scene compare to the physical evidence you recovered?
- Did you find everything, including fingerprints?
- How does the video reenactment compare to your theory of how the fire occurred? Can you reconcile the differences between the statements of the tenants as to how they left the living room and the physical evidence present post-fire?
- How does your theory of how the scene was accessed compare to the actual access method?
- How does the actual movement of the fire compare to your theory?

<table>
<thead>
<tr>
<th>Case Solution</th>
<th>Additional Sources of Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Case Solution” plays a reenactment of how the fire occurred. Watch this video and think critically about how your theory of the case compares to what actually happened.</td>
<td></td>
</tr>
<tr>
<td>5. What additional steps would you take in this investigation to formulate a case against the responsible party?</td>
<td></td>
</tr>
<tr>
<td>[N/A]</td>
<td></td>
</tr>
<tr>
<td>• Insurance Investigation records and database search</td>
<td></td>
</tr>
<tr>
<td>• Witness Statements, especially the owner (Steven Roberts) and tenants (Paul and Ruth Thomas), on the topics of who had access to the scene and what the pre-fire condition of the scene was and pre-fire activity of witnesses</td>
<td></td>
</tr>
<tr>
<td>• Witness Statement of Tasha Gilbert and what she observed the morning of the fire</td>
<td></td>
</tr>
<tr>
<td>• Witness Statements of Deanna Kelly and Ronaldo Reyes</td>
<td></td>
</tr>
<tr>
<td>• Witness Statement of Doron Ingram</td>
<td></td>
</tr>
<tr>
<td>• Witness Statement of Meghan Branigan about a car she observed and the Lab Report for that print</td>
<td></td>
</tr>
<tr>
<td>• Witness Interviews &gt; Conduct Suspect Interview</td>
<td></td>
</tr>
<tr>
<td>• Entire Follow-Up Investigation section</td>
<td></td>
</tr>
<tr>
<td>• Fire Scene Examination &gt; Use Canine Unit</td>
<td></td>
</tr>
<tr>
<td>• Entire Insurance Investigation section</td>
<td></td>
</tr>
<tr>
<td>• Fire Scene Examination &gt; Collect and Preserve Evidence</td>
<td></td>
</tr>
<tr>
<td>• Follow-Up Investigation &gt; Conduct Financial Investigation</td>
<td></td>
</tr>
<tr>
<td>• Follow-Up Investigation &gt; Search Electronic Databases</td>
<td></td>
</tr>
<tr>
<td>• Insurance Investigation &gt; Know How to Use Insurance Information</td>
<td></td>
</tr>
<tr>
<td>• Insurance Investigation &gt; Understand and Request Insurance Information</td>
<td></td>
</tr>
<tr>
<td>• Insurance Investigation &gt; Consult Insurance Personnel</td>
<td></td>
</tr>
<tr>
<td>• Insurance Investigation &gt; Interpret Insurance Records</td>
<td></td>
</tr>
<tr>
<td>• Insurance Investigation &gt; Search Electronic Databases</td>
<td></td>
</tr>
</tbody>
</table>

ABOVE: Reviewing the “Case Solution”
SECTION 6: PROFESSION-SPECIFIC WAYS TO EXPLORE interFIRE VR

Profession-Specific Ways to Explore interFIRE VR cull the sections from the Tutorial, Resource File, and Scenario that are pertinent to specific professions and present them as a training pathway for practitioners of that profession to understand fire investigation within the context of their job. These syllabi (a list of content to explore) allow professionals interested in information pertinent to their daily work to quickly find the sections of interFIRE VR that are the most relevant. These lists can also be used for cross-training, i.e., prosecutors can follow the path for Evidence Technicians to better understand the crime scene evidentiary process.

First Responder (Police, Fire, EMS)

TUTORIAL

- “Before the Fire > Create a Fire Investigation Plan” includes the role of first responders as partners in the fire response effort.
- “Before the Fire > Create and Implement Preventative Strategies” discusses how to implement fire prevention efforts in your community on a variety of levels.
- “Roll-Up > Preserve Scene and Physical Evidence” presents an in-depth discussion of the four functions of firefighters with regard to fire investigation and evidence preservation.
- “Roll-Up > Secure the Scene and Witnesses” discusses basic steps first responders can take to secure the scene and the witnesses.
- “Roll-Up > Contact the Incident Commander” explains the role of the Incident Commander at the fire scene and the integration of the investigation with the work of the fire service.
- “Preliminary Scene Assessment > Get Basic Incident Information” explains what basic investigative information will be required that can be supplied by first responders.
- “Preliminary Scene Assessment > Walkthrough with First Respondent” explains what questions investigators should ask of the first unit arriving at a fire scene.
- “Fire Scene Examination > Handle Injuries and Fatalities” explains how to handle fatalities at the scene to preserve evidence.
- “Witness Interviews > Conduct Interview and Re-Interview” explains what topics the investigator may cover when interviewing first responders about the fire scene.
- “Fire Scene Examination > Examine the Scene and Analyze Fire Flow” covers the basics of how skilled investigators examine the fire scene.
- “Fire Scene Examination > Collect and Preserve Evidence” explains how the many different categories of evidence are treated at the scene to preserve their evidentiary value.

SCENARIO

- Try Scenario Learning Pathway 2 or 3.
- In the Scenario, focus on the interviews of the professionals at the scene (Incident Commander, First Responding Unit, and First-In Firefighter). They will give you an idea of the types of information you should be making mental notes of during the response. Then, manage the officers assisting at the scene by using the “Pointing Finger (Give Instructions)” button from the Scenario MAIN.
- If you are a police officer who assists by conducting interviews, focus on interviewing the witnesses in the Scenario and securing the scene and potential evidence.
- If you are a firefighter, you may be most interested in examining how the fire progressed through the house and comparing burn patterns on room contents.
- In the Follow-Up investigation, look at the Fire Department Reports and Police Report of the incident to see a good model for reports you may make on the job.
RESOURCE FILE
- “Before the Fire > Arson Prevention” provides resources on programs for arson prevention that can be implemented in your community.
- “Roll-Up > Firefighters and Arson Detection” provides resources for firefighters on how to detect arson at the fire scene.
- “Roll-Up > Hazard Identification” provides resources on how to identify and deal with physical hazards at the fire scene.
- “Roll-Up > Overhaul Techniques” provides resources on overhaul techniques that minimize damage to the fire scene.
- “Roll-Up > Evidence Preservation” provides resources on how to perform necessary functions at a scene without compromising evidence.
- “Preliminary Scene Assessment > Search & Seizure Issues > Spoliation” provides resources on how to avoid spoliation of evidence.
- “Preliminary Scene Assessment > Fire Scene Safety” provides resources on safety at the fire scene.
- “Preliminary Scene Assessment > Walk-through with First Respondents” provides resources on the legal considerations of entry and questions firefighters may be asked by investigative personnel.
- The section “General Fire/Arson Topics” provides resources on the basics of fire, arson, and report writing.

Insurance Professional
TUTORIAL
- “Witness Interviews > Conduct Interviews and Re-Interview Witnesses” explains what information witnesses may provide in a fire investigation.
- “Witness Interviews > Conduct Owner Interview” explains the importance of the owner interview in a fire investigation.
- The entire “Insurance Investigation” section covers insurance in the fire investigation and how to get the most benefit from working with public sector fire investigators, private origin and cause experts, and attorneys. Of particular note is the section “Select Origin and Cause Expert and Attorney.”
- “Follow-Up Investigation > Conduct Financial Investigation” covers forensic accounting and its role in the fire investigation.

SCENARIO
- Try Scenario Learning Pathway 2 or 3.
- In the Scenario, the insurance adjuster may want to focus on the Witness Interviews, which include insurance and financial questions, and on the examination of physical evidence for signs of incendiary fire. In addition, practice documenting the scene by taking Photographs and constructing a scene Diagram. In the Follow-Up Investigation, the Insurance Information and Financial Statements may be of most interest to you, especially when compared to Witness Statements.

RESOURCE FILE
- “Fire Scene Examination > An O & C Process - Documenting the Scene” includes resources on proper documentation methods for the scene.
- “Witness Interviews > Interviews at the Fire Scene” contains resources on effective
interviewing.
• “Witness Interviews > Interviewing for Adjusters” provides citations of resources that focus on
the adjuster’s interview of witnesses.
• “Follow-Up and Insurance Investigation > Financial Investigation” contains resources on all
aspects of the financial investigation, including checklists, forensic accounting, and statement
analysis.
• “Follow-Up and Insurance Investigation > Insurance Information”, “Follow-Up and Insurance
Investigation > Immunity Legislation”, “Follow-Up and Insurance Investigation > Arson Fraud
Investigation: Information Sources”, and “Follow-Up and Insurance Investigation > Arson Fraud
Investigation: Insurance” provide multiple, in-depth resources on all aspects of the insurance
investigation and on tools adjusters can use in the investigation process.
• “Follow-Up and Insurance Investigation > Fire Loss Issues for Insurers” contains specific
information for insurers on fire and arson case management, large loss investigation, legal
issues, litigation strategies, insurance fraud indicators, and fire investigation by insurers.
• “General Fire/Arson Topics” provides resources on basic fire and arson topics such as fire
dynamics and fire patterns.

Prosecutor or Attorney
TUTORIAL
• “Before the Fire: Create a Fire Investigation Plan” includes the role of prosecutors as partners in
the overall fire/arson response system.
• “Roll-Up > Preserve Scene and Physical Evidence” and “Roll-Up > Secure the Scene and
Witnesses” covers the basic steps taken at the fire scene to secure evidence and witnesses until
they can be processed. It also addresses protections against cross-contamination.
• “Preliminary Scene Assessment > Secure the Right to Enter” discusses the legal grounds for
entry into a scene.
• “Witness Interviews > Secure Consent” and “Witness Interviews > Document Interview” discuss
how to properly and legally secure consent to interview and record the interview.
• “Fire Scene Examination > Document the Scene” discusses proper documentation practices,
with an eye towards presenting the documentation in court.
• “Fire Scene Examination > Handle Injuries and Fatalities” discusses how to properly handle
victims and preserve evidentiary value.
• “Fire Scene Examination > Collect and Preserve Evidence” details how to properly collect and
preserve all types of evidence for examination and possible court presentation.
• The “Follow-Up Investigation” and “Insurance Investigation” sections detail the post-scene
investigation, which may involve procuring and examining records, obtaining search warrants
for additional locations, and other stages in the follow-up investigation in which the prosecutor
may be involved.
• The entire “Trial Preparation” section (“Prepare Your Case File”, “Prepare Your CV/Resume”,
“Hold Pre-Trial Conference with Attorney”, “Give Deposition”, “Know Trial Procedures”, and
“Understand What Will be Expected of You in Court”) reviews how to prepare expert fire
investigation witnesses for trial from the perspective of the expert.

SCENARIO
• Try Scenario Learning Pathway 2 or 3. The application of the systematic approach in Learning
Pathway 3 may be of particular interest. The attorney can extrapolate how the case might be
affected if a systematic protocol like this one were not applied.
• The Prosecutor or Attorney may benefit from experiencing the multiple contingencies facing the
investigator arriving on the virtual reality fire scene. The outcome of the fire investigation may
be seriously affected by what is done and what is not done at this point in the investigation. Did
critical witness(es) leave before they were identified and interviewed? Did the fire department
overhaul the fire scene to the point where cause determination was no longer possible or over-haul evidence out a window? Was the scene effectively searched and all evidence recovered properly? Did investigators collect evidence improperly that will later be excluded at trial? The beginning of the interFIRE VR Scenario will allow the attorney to experience this “roll-up” situation from the investigator’s perspective.

- Working the Witness Interviews in the Scenario will help the attorney understand how witnesses are questioned by investigators.
- Examining the physical evidence in the Scenario will provide a sample of the types of evidence that are commonly found at the fire scene and how they look in context.
- Completing the Photographing and Diagramming exercises will give the Prosecutor an appreciation of how the scene is captured, which is often used later in court presentation.
- The process of specifying the support needed for the Cause Determination will show what types of support are used to back up an incendiary or an accidental fire call.
- Finally, in the Follow-Up Investigation, the Financial Records and Insurance Information may be of most interest to the Prosecutor because they provide the opportunity to critically examine common documentation for clues to motive and for comparison to information provided in Witness Statements.

**RESOURCE FILE**

- “Before the Fire > Investigative Team Composition” contains resources on case management, task forces, and liability, all of which may require the Prosecutor’s input.
- “Roll-Up > Evidence Preservation” includes discussion of legal considerations in the right to entry and in the fire scene as a crime scene.
- “Preliminary Scene Assessment > Search and Seizure Issues” provides resources on search and seizure and evidence spoliation.
- The entire “Fire Scene Examination” section contains information and resources on all aspects of the fire scene examination, including evidence handling, accidental cause elimination, criminalistics, and documenting the scene.
- “Witness Interviews > Interviews at the Fire Scene” contains resources for interviewing witnesses, including suggested consent forms and statement formats.
- The entire “Follow-Up & Insurance Investigation” section contains resources on multiple topics, including conducting a financial investigation, properly requesting and working with insurance information, immunity legislation, arson fraud investigation, and visual investigative aids.
- The entire “Trial Preparation” section includes information on how expert witnesses should be prepared, including the investigative file, testimony, pre-trial proceedings, and testimony in court.

**Evidence Technician, Forensic Chemist or Laboratory Personnel TUTORIAL**

- “Before the Fire > Create a Fire Investigation Plan” includes the role of laboratories as partners in the fire response effort.
- “Before the Fire > Define Official Responsibilities” defines the roles of all members of the fire investigation team, including the Evidence Technician and Forensic Chemist.
- “Before the Fire > Equip Your Investigative Team” lists the evidence collection equipment required at the scene.
- “Roll-Up > Preserve Scene and Physical Evidence” and “Roll-Up > Secure the Scene and Witnesses” cover the basic steps taken at the fire scene to secure evidence and witnesses until they can be processed. They also address protections against cross-contamination.
- “Preliminary Scene Assessment > Walkthrough with First Respondent” explains what questions investigators will ask of the first unit into the fire scene. The Evidence Technician may wish to participate in this walkthrough to ask questions and mark areas of possible evidence recovery.
• “Fire Scene Examination > Document the Scene” discusses proper documentation practices, including schematics and evidence logs.
• “Fire Scene Examination > Collect and Preserve Evidence” details how to properly collect and preserve all types of evidence for examination.
• “Fire Scene Examination > Submit Evidence for Testing” details what testing can be done on each different category of evidence and how to submit evidence for testing, including a sample Evidence Transmittal letter.
• “Fire Scene Examination > Interpret Non-Forensic Lab Results” and “Fire Scene Examination > Interpret Forensic Lab Results” provide sample lab reports and information on the way lab results are stated.

**SCENARIO**

• Try Scenario Learning Pathway 2 or 3. If you are experienced with fire investigation and familiar with the interFIRE VR software, you may want to try Scenario Learning Pathway 1.
• The Evidence Technician will be most interested in the physical scene examination and the evidence to be collected. This examination extends into the support for the Cause Determination. Viewing the Lab Reports returned in the Follow-Up Investigation will complete the picture of the evidence at 5 Canal Street.

**RESOURCE FILE**

• “Roll-Up > Evidence Preservation” presents resources on steps to take to preserve evidence until it can be documented and collected.
• “Preliminary Scene Assessment > Search & Seizure Issues > Spoliation” provides resources on avoiding spoliation of evidence.
• “Preliminary Scene Assessment > Walk-through with First Respondents” presents resources on how to conduct the walkthrough, which may include the Evidence Technician (to provide an evidence perspective on what is being described).
• “Fire Scene Examination > Evidence Collection and Handling” provides resources on how to properly collect and process evidence, including specific information on evidence containing suspected ignitable liquid residue.
• “Fire Scene Examination > An O & C Process—Criminalistics” provides detailed resources on the collection and testing of many different categories of evidence, including documents, fingerprints, glass, hair and fiber, and toolmarks.
• “Fire Scene Examination > Specialists at the Fire Scene > Evidentiary Issues with Canine Units” provides resource citations on the specific evidentiary aspects of accelerant detection canines.
• “Follow-Up & Insurance Investigation > Laboratory Analysis” contains resources on lab analysis and evidence transmittal.

**Photographer**

**TUTORIAL**

• “Before the Fire > Define Official Responsibilities” defines the role of all members of the fire investigation team, including the Photographer.
• “Before the Fire > Equip Your Investigative Team” lists the photography equipment required at the scene.
• “Preliminary Scene Assessment > Walkthrough with First Respondent” explains what questions investigators will ask of the first unit into the fire scene. The Photographer may wish to attend this walkthrough and document what is described.
• “Preliminary Scene Assessment > Size-Up the Structure” explains how to conduct the preliminary exterior and interior examination. The Photographer may wish to document what is found.
• “Fire Scene Examination > Document the Scene” discusses proper documentation practices,
including photography.

- “Fire Scene Examination > Examine the Scene and Analyze Fire Flow”, “Fire Scene Examination > Reconstruct Scene”, and “Fire Scene Examination > Eliminate Accidental Causes” all describe scene investigation processes that must be visually documented by photographs.
- “Fire Scene Examination > Collect and Preserve Evidence” details how to properly collect and preserve all types of evidence for laboratory examination.

SCENARIO
- Try Scenario Learning Pathway 2 or 3. If you are experienced with fire investigation and familiar with the interFIRE VR software, you may want to try Scenario Learning Pathway 1.
- As a Photographer, you will be most interested in the photographic documentation of the fire scene, including the location, physical evidence, and burn patterns. Because the number of photographs in the Scenario is limited to 72, you may wish to work the Scenario a number of times under different user names, concentrating each time on a different aspect of photographing the scene. In one username, document only the exterior of the property. In another username, photograph only the burn and damage patterns. In another username, photograph only the physical evidence. This technique will allow you to go into more depth on each topic. Then, try one investigation where you attempt to document all important items using only 72 photographs. This will help train your eye to spot the most important features of a fire scene.

RESOURCE FILE
- “Fire Scene Examination > An O & C Process - Documenting the Scene” provides resources on recording the scene and documenting the photography.

Forensic Accountant

TUTORIAL
- “Witness Interviews > Conduct Interviews and Re-Interview Witnesses” explains what is asked of witnesses during an investigation.
- “Follow-Up Investigation > Consult Additional Sources of Information” provides details on records and documents that can be accessed in the course of the investigation.
- “Follow-Up Investigation > Conduct Financial Investigation” discusses the basics of forensic accounting.
- “Follow-Up Investigation > Search Electronic Databases” covers how to use electronic databases in the investigation.
- The “Insurance Investigation” section covers all aspects of accessing and interpreting insurance records, as well as working with insurance personnel.
- If you are called as an expert witness, the “Trial Preparation” section covers how to prepare for testimony.

SCENARIO
- Try Scenario Learning Pathway 2 or 3.
- The Forensic Accountant may be most interested in the Follow-Up section of the Scenario, where he/she can review Financial Records and Insurance Information and compare them to Witness Statements. In addition, the Witness Interviews may be of interest.

RESOURCE FILE
- “Witness Interviews > Interviews at the Fire Scene” contains resources on interviewing, including conducting interviews of financial personnel, such as accountants and book keepers.
- The entire “Follow-Up & Insurance Investigation” section contains resources on multiple topics, including conducting a financial investigation, properly requesting and working with insurance
The entire “Trial Preparation” section includes information on how expert witnesses, such as forensic accountants, should prepare for trial, including the investigative file, testimony, pre-trial proceedings, and testimony in court.

**Medical Examiner Tutorial**

- “Before the Fire > Create a Fire Investigation Plan” includes the role of other agencies as partners in the fire response effort.
- “Before the Fire > Define Official Responsibilities” defines the role of all members of the fire investigation team.
- “Roll-Up > Preserve Scene and Physical Evidence” presents the basics of evidence preservation and scene management, which may include fatalities.
- “Preliminary Scene Assessment > Walkthrough with First Respondent” explains what questions investigators will ask of the first police or fire unit arriving at the fire scene. If there has been a fatality, the medical examiner may want to attend this walkthrough to ask questions about where victims were found and what condition they were in.
- “Fire Scene Examination > Handle Injuries and Fatalities” covers the handling of victims at the fire scene.
- “Fire Scene Examination > Collect and Preserve Evidence” details how to properly collect and preserve all types of evidence for examination, including evidence contaminated with bodily fluids and hair and fiber evidence.
- “Fire Scene Examination > Submit Evidence for Testing” details what testing can be done on each different category of evidence and how to submit evidence for testing, including a sample Evidence Transmittal letter.
- “Fire Scene Examination > Interpret Non-Forensic Lab Results” and “Fire Scene Examination > Interpret Forensic Lab Results” provide sample lab reports and information on the way lab results are stated.
- If you are an expert witness, the “Trial Preparation” section covers how to prepare for testimony.

**Scenario**

- Try Scenario Learning Pathway 3.
- The medical examiner may be most interested in the physical evidence at the fire scene.
- Although the interFIRE VR Scenario does not include a fatality, examining this fire scene as practice will improve the medical examiner’s skills in understanding an entire fire scene.

**Resource File**

- “Before the Fire > Investigative Team Composition” contains resources on case management, task forces, and liability, all of which may require the Medical Examiner’s input.
- “Roll-Up > Evidence Preservation” includes discussion of legal considerations in the right to entry and in the fire scene as a crime scene.
- “Preliminary Scene Assessment > Search and Seizure Issues” provides resources on search and seizure and evidence spoliation.
- The entire “Fire Scene Examination” section contains information and resources on all aspects of the fire scene examination, including evidence handling, accidental cause elimination, criminalistics, and documenting the scene.
- The entire “Trial Preparation” section includes information on how expert witnesses, such as the medical examiner, should be prepared to testify—including the investigative file, testimony, pre-trial proceedings, and testimony in court.
- “General Fire/Arson Topics > Fatal Fire Investigation” contains resource citations specific to fatal fire investigation.
**Canine Handler**

NOTE: In many jurisdictions, the canine handler is also a fire investigator. In general, canine handlers have a wealth of experience with fire scenes, and are also experienced searchers and origin and cause experts. Although the areas below are specifically on the duties of canine handlers at the scene, the canine handler may also benefit from reviewing the Tutorial sections on Fire Scene Examination, as well as other fire investigator duties.

**TUTORIAL**

- If only the canine unit information is of interest, “Fire Scene Examination > Use Canine Units” is the most relevant Tutorial Section.
- If the AK-9 handler is involved in the investigation of the scene beyond handling the dog, the entire Tutorial should be reviewed, including the following sections:
  - “Before the Fire: Create a Fire Investigation Plan”
  - “Roll-Up > Preserve Scene and Physical Evidence”
  - “Roll-Up > Secure the Scene and Witnesses”
  - “Preliminary Scene Assessment > Secure the Right to Enter”
  - “Preliminary Scene Assessment > Size-Up the Structure”
  - “Fire Scene Examination > Examine the Scene and Analyze Fire Flow”
  - “Fire Scene Examination > Collect and Preserve Evidence”
  - “Fire Scene Examination > Handle Injuries and Fatalities”
  - “Fire Scene Examination > Document the Scene”
  - The Trial Preparation section, if the handler is called as an expert witness.

**SCENARIO**

- Try Scenario Learning Pathway 2 or 3.
- Canine Handlers are often experienced searchers and investigators who would benefit from working the entire Scenario. However, if the Handler wishes focus on the specific responsibilities of a Handler, the “Dog (Call Canine Unit)” section is most relevant. The **inter**FIRE VR Scenario provides the opportunity to work the dog not only in the area of origin, but throughout the fire building and property. This allows the handler to include routes of ingress and egress in the AK-9 search, which should be done at every scene. In this case, did you search the property behind the house? Did you find any container?

**RESOURCE FILE**

- There may be many topics of interest to the Canine Handler in the Resource File. The canine-specific sections are:
  - “Roll-Up > Hazard Identification”
  - “Fire Scene Examination > Specialists at the Fire Scene > Canine Accelerant Detection Programs”
  - “Fire Scene Examination > Specialists at the Fire Scene > Use and Misuse of Accelerant Detection Canines”
  - “Fire Scene Examination > Specialists at the Fire Scene > Evidentiary Issues with Canine Units”
  - “Fire Scene Examination > Specialists at the Fire Scene > History of Canine Programs”
SECTION 7: FIVE INNOVATIVE WAYS TO USE interFIRE VR

InterFIRE VR urges investigators to implement the “Team Concept” at the fire scene. Although the interFIRE VR Development Committee was aware that many fire investigators work alone, the Team Concept is preferred for safety, organizational, and case solvability reasons. All areas have access to police officers, fire department, sheriff, state police, district attorneys, and ATF. We encourage every investigator to reach out to these resources and form a team.

The Scenario was designed so a single user could work the entire virtual reality fire scene, pulling in resources such as the two police officers, the AK-9 unit, and the forensic laboratory. By allowing a single user to work the Scenario, the user can practice all aspects of the fire investigation.

Placing one user at the center of the Scenario or as the single point of view on the Tutorial’s investigation protocol immerses the user in the experience, involves them in pacing their own learning, and practices the investigative process from beginning to end. However, it may also unintentionally place blinders on the user, making them unable to see the other ways that interFIRE VR can be employed to make our communities safer. Here are five innovative ideas for how to extend the capabilities of interFIRE VR into new applications.

Team Up
Work the virtual reality fire investigation Scenario as a team. Put together a meeting with members of your department or unit who work fire cases and/or members of organizations who conduct felony investigations in your jurisdiction and who may become members of a local fire investigation unit. Set aside an uninterrupted period of time to work the Scenario together. A minimum of two hours is suggested, however half a day is preferable. In some cases, depending on the number of personnel and their experience level, working the Scenario may take a day or longer. If time is an issue, concentrate on certain aspects of the Scenario, such as just the scene investigation, and take up other tasks, such as the follow-up investigation, at another meeting.

Assign Roles. Make sure each person (or pairs of team members) has a computer and a copy of the interFIRE VR software. Designate a Team Leader and divide up the attendees into Team Concept roles:

- Origin and Cause Investigation (examining area of origin)
- Immediate Area Investigation (conducting witness interviews)
- General Area Investigation (examining remainder of property outside the area of origin)
- Photography and Schematics
- Evidence Collection

Divide Up Duties. Use your judgment in dividing these duties between the number of people you have. Each team member should first review the duties of that position in the Tutorial and any content-related tutorial sections. Then, divide up the Scenario investigation tasks by role and assign them to the appropriate team members (i.e., such as taking photographs to Photography and Schematics member[s] and assigning interviews and locating interviewees to Immediate Area Investigation). Encourage investigators to talk to each other and share information as they work the scene.

Physically Organize. Seat the Photography and Schematics member next to the Origin and Cause member(s) so s/he can follow and take photographs on his/her machine as directed by the origin and cause investigators work-
ing on their machines. Place the Evidence Collection member on the other side of the O&C team, so he/she can follow along and collect evidence at the direction of the O&C investigators. The Immediate Area Investigation can work on the witness interviews and locating witnesses, talking with O&C to keep up on the scene examination. The General Area Investigation team can move out into the rest of the house and yard, searching for evidence and performing tasks like noting the condition of doors and windows and reporting it to the Photography and Schematics member for documentation.

**Meet Regularly.** Set times for team meetings, led by the Team Leader, where each participant shares the information they have gathered. Make new assignments as required. For example, the Immediate Area Investigation may report that they have spoken to the residents and that they insist the space heater was turned off when they left. The new assignment would be for Origin and Cause Investigation to focus on the space heater and determine if it was the cause of the fire.

**Determine Cause and Origin.** When all tasks at the scene have been discharged, hold a team meeting to determine the origin and cause. Share all information gathered during the investigation and create a hypothesis on the cause of the fire. Discuss the elements of proof that your team has assembled. Research any evidence that suggests another hypothesis. Test your hypothesis by considering other fire scenes you have investigated and the training that you have received. Consult credible references such as NFPA 921: Guide to Fire and Explosion Investigations and Kirk’s Fire Investigation, 5th Edition.

If any incendiary classification is justified, discuss each of the possible points of support and whether or not they apply in this case. Then, have all members of the team enter the same O&C determination on their individual computers. If the determination is incorrect, assess the feedback and determine, as a team, how to proceed. If the determination is correct, move on to specify the origin. Once the correct origin is noted on the diagram, proceed to the Follow-Up Investigation.

**Assign Follow-Up Duties.** At this point, reassign personnel to cover the Follow-Up Investigation duties. Assign one team member to review witness statements for missed clues. Assign another team member to comb the insurance files and consult with the person in charge of witness interviews to verify statements about insurance given by the witnesses. Another team member can take the lead on the financial documents, again comparing them to witness statements. The evidence collection team member from the on-scene investigation can now review the lab reports s/he ordered. And a different team member can review all the fire and police reports. Combine duties if you have fewer team members. Again, meet regularly to discuss what is being uncovered.

**Report to the Virtual Prosecutor.** When the Follow-Up Investigation is finished, move on to Report Out. As a group, formulate the answers to the five questions and type them in on one or all of the computers. During the Virtual Prosecutor phase, review these answers compared to the model answers and review and discuss the other feedback measures, such as the status bar performance and the origin and cause determination accuracy. For guidance on how to understand the Virtual Prosecutor feedback, see Section 5: Understanding the Virtual Prosecutor Feedback. Debrief the Scenario with the team, discussing what the team did well and what can be improved. Then, review your own team procedures based on this and adjust how you will approach the next real fire call.

**Cross-Train**

One of the goals of interFIRE VR was to provide a breadth of information on the many different actions of professionals that affect the outcome of fire investigations, including fire suppression, evidence collection, photography, insurance investigation, and trial preparation. Professionals using interFIRE VR may gravitate towards the topics they know the most about or in which they are the most interested. This is a natural tendency and deepens your knowledge in your specialty.
However, interFIRE VR can also be a valuable cross-training tool for disciplines with which you are less familiar. A few examples:

- A firefighter will benefit by reviewing the evidence collection Tutorial sections because they describe the types of evidence at a fire scene, their nature, and how they are used to solve crimes. Thus, a firefighter will better understand the clues that are all around him/her at a fire and will be more aware of how to preserve evidence because s/he knows what it is and how it is used. In turn, they will be more observant the next time they go out on a call.

- A fire investigator will benefit from understanding, in detail, how insurance works in “following the money” and how to involve insurance personnel in the fire investigation.

- A police officer who is called upon only to do interviews will benefit from understanding the effect of evidence, both physical and documentary, on the information he/she can obtain from a witness. Next time, the officer may seek out this evidence and work in better coordination with origin and cause experts to formulate incisive questions involving the information gathered from examination of evidence.

To cross-train using interFIRE VR, try the following. The next time you sit down with interFIRE VR, select the topic with which you are LEAST familiar. Work that topic thoroughly, beginning with the Tutorial section(s) and then moving into the more specific articles in the Resource File. If your interest takes your further, seek out a colleague in this specialty and talk about how you, in your “normal role,” can be of more help in the area you have just learned about.

If you have a more structured environment, such as an Arson Task Force, select a specialty topic, like AK-9 Units, as the focus of the next meeting. Invite your state or local handler to participate. At the meeting, first review the interFIRE VR material on this topic. Then, have the AK-9 handler brief the other team members on when to call, safety concerns, and what each team member can do to increase the effectiveness of the AK-9 at the scene.

Similar presentations can be done on any area of fire investigation, such as evidence (presented by evidence tech or lab personnel), insurance (presented by an adjuster or an insurance investigator), and trial preparation (presented by a prosecutor). Look through the Tutorial for ideas on topics for presentations at your local meetings.

**Drill Down**

“Drilling down” means exploring a single topic in depth, rather than surveying across the entire process. This approach allows you to explore one topic at a time, focusing on the details.

To drill down, pick a single topic in fire investigation, such as accidental fire causes. Begin by viewing the tutorial section on this topic (i.e., Fire Scene Examination > Eliminate Accidental Causes). Then, read all the articles on the topic in the Resource File (for accidental causes, select “Fire Scene Examination”, then “Origin & Cause Determination: Accidental Fire Causes”). Here, you’ll find specific information on the topic (for accidental causes: electrical systems, lightning, lamps, appliances, chimneys, heating systems, spontaneous combustion, and human negligence). Then, go to the Scenario.

Approach the scene at 5 Canal Street by just focusing on the one topic you have selected. In our example, this task is eliminating the accidental causes. Examine every outlet, service cord, plug, and appliance in the room of origin. Then, inspect the furnace and electrical panel in the basement. Talk to the first-in firefighter about his observations of how the fire behaved. Ask the residents about flammable materials they may have kept in the house and about the arrangement of furniture and appliances the last time they were in the living room. Also, check the weather report for lightning strikes in the area since it was raining that morning. Try specifying accidental causes during the Scenario’s origin and cause determination and work with the feedback you receive.
When you have finished the Scenario, find a way to apply your new knowledge to the next scene you work. In our example, you may seek out an electrical expert in your area and work to bring him/her into your investigative team. Or, print out the Resource File’s “Fire Scene Electrical Checklist For the “Non-Electrical” Engineer.” Supplement this by adding your own items based on what you’ve learned and use the checklist at your next scene. Approach your next scene by thoroughly investigating every potential accidental cause, documenting your examination, eliminating it where appropriate, and calling in an expert when the examination is beyond your expertise.

The “drill down” approach will work for a variety of specific topics. Try:
- evidence collection
- criminalistics (trace evidence)
- ignitable liquid residue sampling techniques
- incendiary fire causes
- use of the AK-9 unit
- insurance investigation
- financial investigation
- interviewing
- fire patterns and fire dynamics
- working with professionals at the scene
- firefighting
- arson prevention
- investigative toolkit preparation

Focusing on narrow areas will improve your specific knowledge of that area and will allow you to see a scene from a variety of perspectives and manage more angles when you go out on your next call.

**Go To Court**

Approaching cases with the mindset that they may one day be the subject of a legal proceeding helps you make decisions at the scene that will stand up in court. The interFIRE VR Scenario provides an opportunity to practice “going to court” on a fictional case.

Set up a special event for your local professional association, task force, police department, or firehouse. Have the group work the interFIRE VR Scenario prior to the meeting, either individually or as a team. Then, divide into three teams or individuals: prosecutor, defense counsel, and expert witness(es). Have the prosecutor and defense counsel each prepare an opening argument for the case at 5 Canal Street, including who is being charged with the crime and laying out the evidence against that person. Ask a local prosecutor or attorney to act as judge and present the arguments in a mock trial. Then, call the expert witness(es) to testify on the case.

Afterwards, debrief the exercise, evaluate the arguments and the presentations, as well as the testimony given. If a more elaborate presentation is possible, consider assigning people to play key witnesses in the case, including the defendant. This exercise will give investigators and first responders a better appreciation of how these cases are presented in court and how the fire investigation will be scrutinized at trial.

If a full trial isn’t practical for you, set up mock depositions on interFIRE VR with a local prosecutor. Work the Scenario before you meet with the prosecutor and then show your case file on the computer to the attorney. Discuss the case and what would be an issue at trial. Then, conduct a mock deposition on the case where you are the expert witness, first with the attorney acting as a prosecutor and then as defense counsel. This exercise will help you sharpen your testifying technique.
**Kid Around**

Add interFIRE VR to your toolkit for your town’s next fire or crime prevention event. The virtual reality house in the Scenario provides an excellent opportunity to talk through the points of fire prevention using a real house as an example.

Kids will love the Scenario’s “game” aspect and, in the process of walking through 5 Canal Street, you can point out fire prevention information in a very real context. Apply the many aspects of fire prevention to this real home at 5 Canal Street so kids can learn better how to fire-prepare their own homes:

- Show kids how the closed bedroom doors in the upstairs hallway stopped the fire, smoke and heat that devastated the upstairs bathroom.
- Show kids the smoke layer in the living room using the sooty wall next to the stairs and illustrate how the air at the bottom stayed breathable—which is why they need to crawl out of a fire.
- Use the space heater close to the couch and the extension cords running across the floor to demonstrate fire hazards in the home.
- Show kids the AK-9 unit search and explain how dogs work at a fire scene.
- Get the kids involved in wandering through the house in the VR and ask how they would have escaped this fire if they had been in a bedroom upstairs, a bedroom downstairs, or in the kitchen.
- Discuss the best places in this house for fire alarms and fire extinguishers.
- Use the schematics diagram to show kids how to plot an escape route out of this house.

After the presentation, let the kids play with the software on the computer. Show them how to move around the VR and collect evidence. Explain to them what fire investigators do and how they do it and why they are important to fire safety. Inspire the next generation to go into the public service of keeping all citizens safe from fire.
InterFIRE VR is not just for beginners! Although experienced investigators may find much of the basic information in interFIRE to be “second nature” to them, there are many features in the software that were designed to challenge more experienced investigators.

For a more challenging path through interFIRE VR, try these suggestions:

**The Resource File.** The hundreds of articles in the Resource File hold a great deal of detailed information that will add to the knowledge base of experienced investigators. Browse the “Fire Scene Examination” section, including “Accidental Fire Causes,” “Origin & Cause Determination,” and “Incendiary Fire Causes” to read specific articles on narrow topics with which you may be less familiar.

**Insurance and Financial Investigations.** Topics in insurance and financial investigation are unfamiliar to many experienced investigators, who focus much of their effort on witness interviews and the physical examination of fire scenes. Information contained in insurance files and in financial records may contain valuable evidence about possible motive in incendiary fire cases.

In the Tutorial sections “Insurance Investigation” and “Follow-Up Investigation > Conduct Financial Investigation,” review the techniques for accessing and interpreting documentary evidence. The Insurance Investigation section has detailed explanations of actual insurance documents, how to read them, and where to look for evidence of fraud in the homeowner application, binder, declarations page, loss notice, proof of loss, and claim acknowledgement and records request.

**Evidence Collection.** Evidence collection and forensic testing is a constantly evolving field. The Tutorial section “Fire Scene Examination > Collect and Preserve Evidence” contains detailed information on proper collection and packaging for nearly every type of evidence—body fluids, cigarettes, explosives, fabrics and textiles, fibers, fingerprints, fire debris, firearms, food/drug/plant specimens, glass, hair, impressions, ink, liquids, metals, paint, plastics/adhesives/asphalt, tar/waxes/grease/oils, questioned documents and paper/cardboard, soil, tape, wood, and victims. In addition, video tutorials show today’s best methods for collecting samples of fire debris for ignitable liquids testing. All investigators should be well versed in collecting and packaging each type of evidence, some of which are not routinely seen at the fire scene.

**Challenges in the Scenario.** The Scenario at 5 Canal Street will challenge the skills and investigative intuition of even the most experienced fire investigator. There are many different leads to follow-up, “red herrings” to be careful of, and evidence that is not easy to find. Working this entire case to a successful conclusion offers an unparalleled learning opportunity.

However, if you are seeking a specific challenge, the experienced investigator can focus on:

**Eliminating Accidental Causes.** There are more than eight potential accidental causes in the area of origin. Focus on finding and eliminating them as the cause of the fire. Check the Status Bar for your progress on this task (an explanation of the Status Bar is located under the “?” (Help) button on the Scenario MAIN frame).

**Finding the Fiber and the Fingerprint.** In the scene, there are two pieces of evidence that are difficult to find: a fiber and a fingerprint. Examine the scene very closely and try to find them. Hint: try routes of ingress and egress.
The Car. If you properly canvass the crowd and interview the “fleeting witnesses,” you may find “the car” and evidence left by it. Focus on uncovering and following this lead.

Cause Determination. Specifying an Incendiary cause for this fire requires supporting the call with evidence at the scene. Focus on proving or disproving each of these points as support for an incendiary call. Some points may not be present at this scene; others may be present but not appropriate support for an incendiary call. The twenty-five possible points of support are:

- a possible ignitable liquid container found at the exterior of the scene
- a possible ignitable liquid container found in the house
- a possible ignitable liquid container found in the trash at 13 Canal St.
- a possible ignitable liquid container (paper bag) found at the scene
- odor of gasoline in the living room
- canine alerts in the living room (subject to confirmation by laboratory analysis)
- canine alerts in the dining room (subject to confirmation by laboratory analysis)
- elimination of all reasonable accidental causes in the area of origin
- reliable witness statement from Paul Thomas (tenant) that no ignitable liquids were stored in the room of origin
- canine alerts in the woods behind the home (subject to confirmation by laboratory analysis)
- reliable witness statements of a strange delivery person in the neighborhood that week
- reliable witness statements of the family dog at Canal Street being loose the morning of the fire
- reliable witness statements that go to motive and/or evidence of participation for the neighbor at 3 Canal St (Martin Wakiza).
- reliable witness statements that go to motive and/or evidence of participation for the owner (Steven Roberts) of 5 Canal St.
- reliable witness statements that go to motive and/or evidence of participation for the tenants (Paul and Ruth Thomas) at 5 Canal St.
- reliable witness statement from Paul Thomas (tenant) that the living room space heater was not in the same location where he left it
- reliable witness statements about a car seen on the road beyond the woods beyond 5 Canal St. before the fire
- reliable witness statements about a group of kids seen at 5 Canal St. just before the fire evidence of burglary at 5 Canal St.
- firefighter statements as to the behavior and location of fire during suppression efforts
- jogger statement that he saw someone running from the fire scene
- forced entry into the exterior kitchen door by the garage
- forced entry into an exterior window
- visual and physical examination of patterns left by the fire that were indicative of a ignitable liquid on the floor of the living room of 5 Canal St.
- visual and physical examination of patterns left by the fire showing the spread and development of the fire

Corroborating Information. There are a number of witness statements that are contradicted by facts found at the scene and by documentation in the Follow-Up. Focus on clearing up these inconsistencies. They include:

- Condition the home was left in, as stated by the tenants, compared to physical evidence at the scene.
- Relationship between neighbor Martin Wakiza and the tenants.
- Statements by Tasha Gilbert and her boyfriend about their activities before the fire.
- Accounts of activities at 5 Canal Street in the week prior to the fire.
- Insurance and financial information from the owner.
A Perfect Status Bar. Achieving 40 “green” and 0 “red” on the Status Bar is very difficult. Status Bar measure #39 is particularly difficult to achieve. Go for “40 green.” Achieving this will take a considerable amount of time and effort at the scene, but doing so will mean that you have fully investigated the fire at 5 Canal St. For hints on what each Status Bar tick measures, view the Status Bar Help file from the Scenario MAIN menu by clicking on the “? (Help)” button. Remember that not all Status Bar measures will turn green when you are in the Scene Investigation. Some require that you move to the Follow-Up before they are judged. Review your completed Status Bar in the Virtual Prosecutor section.

Scenario Learning Pathway 1. Follow Scenario Learning Pathway 1, as described in Section 4.
The fourth leg of the interFIRE VR training program is a web site dedicated to keeping members of the fire investigation community up to date on important legal and technical information affecting their field. Available from anywhere with an Internet connection, this web site contains powerful features that make it an important, daily resource.

You can connect to interFIRE.org directly from the interFIRE VR software by clicking the button “CONNECT TO www.interfire.org” on the main software menu accessed after you sign-in. You must have an Internet connection open for the interfire.org web site to display. If you have a dialup connection, connect first, then jump to www.interfire.org. Or, you can enter http://www.interfire.org directly into the Address Bar in your Web browser.

Features of the www.interfire.org web site include:

- A Training Center with new online training modules to improve your fire investigation skills.
- The Resource File has been placed online containing the same articles, photographs and content as in the interFIRE VR CD-ROM.
- Feature articles – A constantly changing series of articles written by recognized experts in the field about important developments and new techniques.
- Links to the NHTSA (National Highway Transportation Safety Administration) and the CPSC (Consumer Product Safety Council) to obtain source information about defective vehicles and product recalls of products that could pose fire hazards.
- Link to MSDS (Material Safety Data Sheets) information on thousands of chemicals.
- Links to dozens of fire investigation web sites.
- Legal Updates from trial and appellate courts, updated weekly, on fire and arson cases nationwide.
- Message Boards where you can pose a fire investigation-related question under a user name and receive responses from all over the world. There are also specialized message boards for fire investigation, accelerant detection canine handlers, evidence technicians, and insurance investigators.

The web site is constantly being updated and improved. Check back often and become part of this community.
InterFIRE VR was created as a response to a national crisis – an unacceptably high incidence of arson in our cities and towns and a historically poor conviction rate for arson offenses. InterFIRE VR was designed by experts from the fire service, law enforcement, fire codes and standards and the property insurance industry to provide a unique training approach that will help improve the skills of all fire investigators and allied professionals. InterFIRE VR was never intended to replace standard fire investigation training, only to supplement to it. By getting the most from interFIRE VR and using it in the variety of ways suggested in this User’s Guide, you are part of the solution and will be better equipped to serve your community.