

Student attitudes and views of burn and fire safety

A study conducted by
The People's Burn Foundation

and

Campus Firewatch

September 4, 2007



CAMPUS
Firewatch

College Student's Views and Knowledge of Burn and Fire Safety
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ABOUT THIS STUDY

This study was commissioned by the People's Burn Foundation of Indiana in order to learn more about what college-age students know about burn and fire safety. Intuitively, among fire safety educators and professionals, it was felt that there was a significant knowledge gap, but this had never been explored.

Also, with today's generation, it was important to learn what would be the most effective way to communicate with them about fire and burn safety. Recognizing that this topic is not something that is necessarily "on their radar screen," it is important to use a medium that they are comfortable with and that will be effective in getting these life-saving messages across to them.

This information was gathered by conducting an online survey and as series of focus groups at schools in Indiana and Massachusetts. In addition, an online, "virtual" focus group was held using Second Life, which was an innovative and creative method of gathering even more input.

It is vitally important to realize that the information being reported in this study is not scientific in nature, but is more anecdotal. It provides a "snapshot" into the minds of today's college students and can serve as a guide to developing programs.

We would to thank the following schools for participating in this study by arranging for focus groups. The information we gathered during these sessions were invaluable.

Boston College
Butler University
Gordon College
University of Massachusetts Amherst
Wesleyan University

We would also like to thank all of those who took part in the online survey and the Second Life focus group who provided us with a wealth of information as well.

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PARTICIPATING ORGANIZATIONS

PEOPLE'S BURN FOUNDATION

The [People's Burn Foundation](#) (PBF) was established in 1996 by Della Hines, a mother who lost two children in a house fire that left her and her eldest daughter severely burned. Della's original mission was to create the first burn camp for children in the state of Indiana. Since then, the Foundation has worked to fill service and educational gaps specifically relating to the emotional recovery process for burn survivors and prevention education, and is now respected as a "model" for many other burn foundations throughout the United States.

The Foundation's primary service programs include [Extinguish the Need](#), [Brave Hearts' Camp](#), and burn survivor/family support systems to preserve the integrity of the family during the long burn recovery process. Educational programs include [McAxe & the Fire Crew](#), [CC & the Cool Rule](#) and [To Hell and Back](#).

Extinguish the Need (ETN) is a donor-supported program that rehabilitates families following total fire loss, by replacing household furnishings and clothing, free of charge. Brave Hearts' Camp is a weeklong rehabilitative, residential camp during which counselors, professional firefighters, and adult burn survivors work with young burn survivors to improve self-esteem and self-confidence through structured, therapeutic activities.

On an everyday basis, the Foundation also works in partnership with the [Richard Fairbanks Burn Center](#) to insure burn survivors and their family members have the ability to maintain family integrity during the long and brutal rehabilitation process for severe burn injuries. McAxe & the Fire Crew and CC & the Cool Rule are fire and burn safety programs delivered throughout the state of Indiana targeting second and third grade children.

To Hell and Back is a national burn prevention program specifically designed for professional firefighters to teach the very basics of Personal Protective Equipment as it relates to protecting the body from burn injuries, and a program for first-responders that teaches pre-hospital treatment of the burn patient. Launched in 2006, this program is the first of its kind and now utilized by fire departments throughout North America.

Due to the phenomenal success of the first chapter of *To Hell and Back*, the [Department of Homeland Security](#) funded yet a second grant to expand upon burn prevention education for firefighters with a Situational Awareness chapter. That grant also includes a community-based burn prevention program targeting the high school population, adults, and juvenile fire setters scheduled for distribution to all 36,000 fire departments in the United States in April 2007.

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CAMPUS FIREWATCH

[Campus Firewatch](#) is a monthly, electronic newsletter focusing on the complex issues of campus fire safety and has been in publication since 2000. It is recognized as a national focal point for campus fire safety information through both the newsletter and its website. Prior to CFW, there was no single source of information or resource exchange available for the campus fire safety official.

CFW is published by Ed Comeau, the former chief fire investigator for the [National Fire Protection Association](#). In 1999, under a contract from the U.S. Fire Administration and the NFPA, Comeau organized the first Campus Fire Forum which brought together experts from across the United States to learn more about the issues facing campuses and communities. This has led to a series of annual national conferences.

In 2000, recognizing the need for better information exchange among community and campus officials, Comeau started publishing Campus Firewatch and its accompanying website. He also designed and developed the content for the [U.S. Fire Administration's](#) first website focusing on campus fire safety and was the author of the first chapter focusing on campus fire safety for the NFPA Fire Protection Handbook. He also was the producer of the video "Graduation: Fatally Denied" that chronicles the events surrounding a fictional student's encounter with a fire.

Due to the success of the newsletter, Comeau then founded the non-profit [Center for Campus Fire Safety](#) with funding from a series of national organizations dedicated to reducing the loss of life and injury at campuses across the country. Under his leadership the Center embarked on a series of events and activities that included working closely with legislators on Capitol Hill to introduce and promote a series of campus-related bills; organizing the landmark Capitol Hill Intern Fire Academies and the Capitol Hill Campus Fire Safety Summits. Campus Firewatch has been instrumental in bringing together a diversity of national fire safety organizations to support key legislation moving through Congress.

In order to raise awareness of fire safety across the nation, Comeau coordinated a campaign to have September recognized as [Campus Fire Safety Month](#). A letter, co-signed by a group of parents who have lost children in campus-related fires, was sent to each governor, and in 2005 12 states issued proclamations. This increased dramatically in 2006 to 31 states and a resolution was unanimously passed in the U.S. House of Representatives. For 2007, nine states have issued proclamations as of July, and the U.S. Senate passed a resolution as well.

Using the power of the Internet, Comeau has launched a new project in partnership with Radio@Firehouse.com called [Campus Firewatch Radio](#) which is a monthly podcast where Comeau interviews leaders and innovators in the field of campus fire safety. The Campus Firewatch website provides a wealth of information including a regularly updated [Information Sheet](#); [legislative information](#); [downloadable videos](#) and much more on its [Resource](#) page.

Campus Firewatch maintains the [Campus Fatal Firelog](#) which is a compilation of incidents identified by Campus Firewatch since January 2000. This is the only source of information available on campus-related fatal fires and is widely used by communities, campus officials and the media.

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EXECUTIVE SUMMARY

OVERVIEW

The 2006-2007 academic year has been the most fatal one on record, with 20 campus-related fire deaths identified by Campus Firewatch. All of the deaths have been in off-campus housing except for two, which occurred in fraternities. Off-campus housing is typically a rented house or apartment and, according to the U.S. Department of Education, approximately 2/3 of the students in this country live off-campus.

There are five common factors that have been observed in a number of campus-related fatal fires since January 2000:

- Over 80% of the fires occur in off-campus housing such as rented houses and apartments.
- These occupancies lacked automatic fire sprinklers
- There were missing or disabled smoke alarms
- Careless disposal of smoking materials was a common factor in the fire cause
- Impaired judgment from alcohol consumption played a role

The very same factors that are found in campus-related fires are identical to the problems found in fires at-large throughout the United States.

In other words, the fire safety problem at our nation's campuses mirrors the fire safety problem throughout society. If we can address the campus fire safety problem, this will have a dramatic impact in the next five, ten or fifteen years in terms of fire safety across the nation as these students graduate and move onward.

The solutions to the problem are well known – education, detection and suppression. However, implementing them effectively and broadly can be a challenge, particularly the educational component.

Across the nation, there is a distinct lack of fire safety education being provided to the public between the ages of 10 and 65. This means that approximately 68% of the population does not receive regular fire safety information that can help to save their lives. So often we are dismayed when an elderly person dies because they did not have a smoke alarm and were smoking while on oxygen. What we're asking is unreasonable – for a person to change a lifetime of unsafe habits and practices. Wouldn't it be better to change these when they are younger?

Also, if the fire safety training that we are regularly providing to children is effective, and it has been in place for at least 20 years, shouldn't today's college students know what to do? Since they don't, it would appear that the training either is not effective or it is not being maintained and adapting as they grow older. In other words, the message is not maturing with the audience.

Over 3,700 people die in fires each year, and this number has leveled off without any significant changes foreseen unless we act. To help address the loss of life and property from fire it is critically important to provide effective fire safety education to a challenging demographic – the 18 to 24-year-old student. To be effective in the Internet age, the message and medium needs to be one that will appeal to the students and keep them engaged. Not only will this reduce the loss of life and injury that occurs on a daily basis, but it will also help to reduce property loss and damage as well, today and for the future.

The goal of this survey was not to develop a scientific, statistical analysis of student knowledge of fire and burn safety. Instead, it was a first attempt at ascertaining their level of awareness and to

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gain a perspective on their attitudes towards these subjects and how much fire and burn safety is a part of their "makeup." Another part of this project was to determine how today's generation of students gets their information.

Providing effective education and training to today's electronic generation is a daunting task, whatever the subject matter. When it is a topic such as burn and fire safety that, admittedly, is not one of the subjects that is within an 18-year-olds "top ten" list, it becomes even more challenging.

The student demographic is one of the most sought-after groups by retailers and marketing organizations. It is a group with a significant amount of disposable cash and, more importantly, they are at an age in their lives when their future habits and buying trends are being formed. According to David Morrison in his book *Marketing to the Campus Crowd*:

...the college market of today is largely an untapped opportunity...other nonprofit causes should be targeting this audience for the same reason...even if a student is not converted into a volunteer per se, he or she is at least likely to be shaped by merely being a passive observer. This process of installing future attitudes could prove quite beneficial when students assume positions of power...

Most important, even Fortune 500 companies and their advertising/promotion/public relations agencies seeking to alter consumer behavior and attitudes should regard the campus crowd as an indispensable portal to societal change. Whether the topic is organic foods or eco-friendly transportation, the college market is highly receptive to new options to the status quo (let alone actual solutions!) and can function as a catalyst to ultimately shape mainstream usage and attitudes."

It is possible to adapt the techniques used by some of the most effective marketing firms to that of burn and fire safety, but it is vitally important to know more about this demographic. What they think and what they know (or don't know) about this subject will help to determine the shape of the message. It is also equally important to know more about how they get their information in this electronic age so it can be delivered effectively.

To accomplish this, the People's Burn Foundation and Campus Firewatch teamed up to conduct a series of focus groups, both in real-time and virtually, along with an online survey of students across the nation. This unprecedented project was designed to provide a "first look" at student's knowledge and attitudes and serve as a stepping stone for future, more detailed and in-depth studies.

FINDINGS

Lack of knowledge The respondents in this study have a significant lack of knowledge when it comes to burn and fire safety. This was not only demonstrated in the answers to their questions but also by the participants, themselves, admitting their lack of knowledge. This points, not so much to a failure on the part of the student, but that of the fire safety community at large to develop and deliver programs targeting this demographic. Much of the nation's fire prevention efforts are targeted at the very young and the elderly, leaving a large gap in the middle that routinely do not receive burn and fire safety information. This is an unprecedented opportunity to change the future of fire safety across the nation by teaching this "captive" demographic what they need to know.

Thirst for more knowledge In realizing that they lacked this knowledge, many of the participants voiced the desire to learn more about how to avoid burns and fires and what to do if one should occur. **They want to know more and we should rise to the call.**

Delivery Delivering burn and fire safety information to this demographic in an effective manner is the challenge. They want to be entertained and engaged, and that is what they have come to expect in an age of youtube.com and cable television. The messages don't necessarily change (change your battery in your smoke alarm, for example), but how it is delivered can make all of the difference.

This is probably the most challenging part of the problem. The solutions are known and have been known for many years. Changing people's behavior has always been the difficult part of the solution. However, with the advent of the Internet, this provides an unequalled opportunity to reach large masses of people quickly, effectively and cost efficiently. **However, it has to be done right – simply putting up a web page is not the solution.** A multi-faceted approach is needed that involves using multiple platforms, media and opportunities. Today's students are expecting to be entertained and engaged and for a burn and fire safety education program to be effective it must meet both of these criteria.

It is also important to provide a motive, an incentive, for students to take part in burn and fire safety education programs. Some of it they will do simply because it is fun or different (putting out live fires with a fire extinguisher). Other times, by offering them the chance to win a prize through a raffle by taking part in a focus group or class, or providing them with access to download songs over the Internet are effective strategies. A number of students told us that a certificate for a free cup of coffee in return for watching a short online video would be enough motivation. In other words, the threshold to get them involved is not necessarily a high one.

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STUDY METHODOLOGY

An online survey of 584 self-selected students was held during April and May 2007. As an incentive, everyone who participated was entered into a raffle for an Apple iPod. Notices about the survey were sent out nationwide via various listservs and email distribution lists.

OVERVIEW OF THE ONLINE SURVEY RESPONDENTS

- 90% of the respondents were underclassmen
- 60% live on campus
- 57% of the respondents were 19, 20, 21 years of age
- 60% were female

Participants came from the following schools:

| | |
|---|--------------|
| Babson College | Northeast |
| Boston College | Northeast |
| BYU-Idaho | Midwest |
| CCU | West |
| Coastal Carolina University | Southeast |
| Gettysburg College | Mid-Atlantic |
| Iowa | Midwest |
| Ithaca College | Northeast |
| Montclair State University | Mid-Atlantic |
| Rensselaer Polytechnic Institute | Northeast |
| Salve Regina University | Northeast |
| Shawnee State | Midwest |
| Southwestern Assembly of God University | Southwest |
| University at Buffalo | Northeast |
| University of Iowa | Midwest |
| University of Kentucky | South |

FOCUS GROUPS

Live focus groups were held at

| | |
|-------------------------------------|-----------|
| Boston College | Northeast |
| Butler University | Midwest |
| Gordon College | Northeast |
| University of Massachusetts Amherst | Northeast |
| Wesleyan University | Northeast |

In addition, for the first time ever, an online focus group was held using Second Life, an online virtual world. There participants in this focus group were predominantly educators from colleges and universities and they provided a unique (and tremendously underserved) perspective on educating today's students. This focus group was coordinated by Sarah Robbins from MediaSauce and sponsored by the People's Burn Foundation.

The People's Burn Foundation and Campus Firewatch appreciate the support provided by a number of people at these institutions who provided coordination of all of these activities.

IMPORTANT CAVEATS

When reviewing these findings and results, there are several very critical points to keep in mind.

- The respondents in the online survey and the focus groups were self-selected and not a random survey. For that reason, these results should only serve as a window into what students are thinking and what they know about fire and burn safety. No extrapolations can be made to the larger 17 million students that are enrolled in schools across the nation.
- Much of the information gathered was anecdotal in order to get a first-look at what students know and think. Because of this, it is not possible to make statistical assumptions. However, this was invaluable in getting a sense, a perspective, on their views and attitudes.
- Many of the findings of this informal survey reinforce what has been observed over the years by campus fire safety officials.

FINDINGS

SIGNIFICANT KNOWLEDGE GAP

Today's student demographic has a lack of relevant fire safety information. What is meant by "relevant" is that students know what to do to protect themselves from fire in their current stage of life. A number of times, when asked what to do if their room was on fire, the response was either "don't know" or incorrect responses such as "Stop, drop and roll," or "crawl low in smoke." When asked how to treat a burn injury, the most frequent answer (by a significant margin) was "I don't know."

Students in the 18-to-24-year-old age group now have more personal responsibility for safety. They just don't know it. They are now responsible for their own actions when it comes to fire and burn safety, selecting fire-safe housing and much more.

In addition, for many of the students, the last time they received fire safety information was in elementary school, which could be one of the reasons that the information they have is not geared towards their current living situations. The fire safety message has not matured with the audience if what they remember about fire safety are the lessons that are taught in elementary school.

HOW THIS LACK OF KNOWLEDGE TRANSLATES

Actions to take in a fire

When students were asked in another free-text question "What steps are you supposed to do if you have a fire in your room?" the responses by 402 respondents were broken into six major categories (492 people answered this question; 93 respondents did not).

- Evacuation activities 108
- Don't know 98
- Extinguishment activities 76
- Crawl low 54
- Call 911/alert others 35
- Check door 31

The correct order of activities should be to evacuate, call 911/alert others and then attempt extinguishment (if it can be done safely, if they are trained in how to use a fire extinguisher, if there is one available, if the fire size does not exceed the capabilities of the fire extinguisher and other caveats).

What these responses indicate is that many of the students quite simply did not know the correct order of events that they are supposed to do if there is a fire in their room. While almost 20% of the responses were correct (108), over three-fourths of the respondents either did not know what to do or would have done the wrong action first. Since 81% of the respondents were sophomores or higher, it could be assumed that they would have been exposed to some level of fire safety training at college. Either they weren't or it didn't "stick."

Attitude towards burn and fire safety

The lack of knowledge was reinforced by their answer to the question "what is your view of fire safety" where they were allowed to give free-text answers. While the answers obviously varied, the one common theme that emerged in 20% of the respondents (it was essentially the only common theme) was how little they know about fire safety and how little training they have received. In the focus groups, a number of the participants also acknowledged, as a result of the meeting, that they suddenly realized how much information they lack when it comes to fire and burn safety.

Knowledge about burn and fire safety

Another indicator was when they were asked "What is the leading cause of fatal fires in the United States." The answers were evenly split between electrical (30%), smoking (28%) and candles (28%). The correct answer is smoking, which is the leading cause of fatal fires and has been for ten years. This indicates that our national educational efforts are not as effective as they could be in communicating with this demographic.

The responses to the question "What are the three leading causes of burn injuries," also indicate a lack of awareness and knowledge. Of the 492 responses to this question, 235 answered "Don't know." The remaining 179 responses were divided between cooking (83), smoking (37), fire (24), hot water (16), candles (12) and sunburn (7).

The question "How do you treat a burn injury" also had a range of answers, but again the predominant one was "Don't know" with 190 responses out of 524. This question did not qualify what degree burn (first, second or third), so the answers varied significantly. While a number of them did reference basic care such as using cool water, others were at the other extreme and included removing the skin, using coatings such as aloe, toothpaste (mentioned several times), shaving cream, Vaseline and vinegar.

Level of protection

When looking at the level of fire protection (smoke alarms/detectors and sprinklers) that is in place where the students live, as would be expected the level of protection for students living on-campus is much better than those living off-campus (more are living in housing equipped with smoke alarms and sprinklers). As stated earlier, since this is a self-selected survey, it would be problematic to make broader assumptions about the level of fire safety in residence halls nationwide based on these responses.

However, it is a different story when looking at the level of fire safety in the off-campus environment where approximately 2/3 of the students live, nationwide, according to the [U.S. Department of Education](#) (40% of the respondents in this survey live off-campus). Since the off-campus housing stock is not under the control of any institution, there is no reason to assume that the type of occupancies that these students are living in vary significantly from housing stock in other college communities and therefore some broad assumptions may be valid.

A sizable percentage of the respondents reported that they had a smoke alarm either outside of where they sleep (94%) or inside of their room (60%). However, when asked if they test these smoke alarms, only 40% reported they test it themselves. When asked if someone else tests it, 56% reported either "no" or "don't know." In other words, while there may be a sizable percentage with smoke alarms in their off-campus housing, they may not be operational. This is the case when looking at smoke alarm usage, nationwide, in all residential occupancies. [The](#)

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[NFPA](#) reports that there are smoke alarms in 96% of the residences (which are defined as one- and two-family homes and apartments). Approximately 40 percent of the fatal fires occur in the 4 percent of homes without working smoke alarms.¹

A similar finding exists for sprinkler protection, which is not surprising. Only 15% of the respondents living off-campus reported that they lived in housing equipped with automatic fire sprinklers. While a comprehensive survey of off-campus student housing building stock has never been undertaken, anecdotally it would appear that many students live in older housing that is converted one- and two-family housing or older apartment buildings, all of which are not likely to have sprinkler protection in place. [USA TODAY](#) did an analysis of a series of campus-related fatal fires. They determined that 69% of the fatal fires occurred in housing that was built in 1929 or earlier²

Another indicator of fire safety awareness was when the students were asked if they look for a second means of egress when they are in a nightclub, restaurant or other public assembly. A large percentage, 60%, reported that they did not look for a second way out. Such a basic fire safety practice could have a significant role in the outcome of a fire if more people were conscious of taking a "quick look" when they are in these occupancies. This was tragically demonstrated at [The Station nightclub fire](#) in Rhode Island that killed 100 people when almost two-thirds of the occupants attempted to exit through the main entrance and many were unsuccessful in doing so.

On a positive note, many of the students reported that they had been trained in how to use a fire extinguisher (61%), although the percentage with fire extinguishers accessible to them varied (83% for on-campus, 59% for off-campus).

¹ NFPA U.S. Experience with Smoke Alarms, November 2004

² Davis, Robert and DeBarros, Anthony. "Alcohol and fire a deadly mix." USA TODAY, updated August 30, 2006. http://www.usatoday.com/news/nation/2006-08-29-campus-fires-cover_x.htm

EFFECTIVENESS OF DELIVERY PLATFORMS/METHODS

Today's students are an electronic generation and this provides an excellent opportunity to provide them with information in a highly-effective manner.

According to the [Pew Internet and American Life Project](#), 87% of those between the ages of 18 to 29 are online.³ The [College Explorer Study](#) reports that 59% of the students are now using laptop computers, an increase of 8% over the previous year, and 13% fewer students are using desktop computers. Over the previous year, an additional 1.3 million students have cell phones and 41% have MP3 music players. They are spending 3.5 hours a day doing email, instant messaging and web surfing. It is estimated that the average student spends 20 minutes a day sending and receiving text messages.⁴

Social networks such as [myspace.com](#) and [Facebook](#) have become major players. [Alloy Media + Marketing](#) estimates that 70% of the students participate in these sites to communicate with friends and are on these sites 6.5 hours a week. What is very telling is that 61% of the students are interacting online with people they have never met in person, and it is estimated that the average student has 111 "friends" that they interact with in this manner, which is a new definition of friends from previous generations.

This is a "youtube.com" generation that expects to get its information in small, short, dramatic and interesting segments. The videos that are on youtube.com are a great example of what the 18-to-24-year-old demographic is watching. To reach this demographic, it is important that the material be in a similar format.

In one of the questions in the PBF survey, respondents were asked to rate, on a scale of 1 (least effective) to 10 (most effective) various education delivery platforms. In rank order:

Most effective

- 10** Demonstrations such as fire extinguisher training, burning mockups of student rooms, etc.
- 9** Instructor-led group training
- 8/7** Student to student and Online/Internet-based information were tied
- 6** Flyers
- 5** Advertisements around campus
- 4** Advertisements in newspapers
- 3/2** Video downloads to iPods and cell phones were tied
- 1** Advertisements on buses

Least effective

When coupled with the findings of the focus group interviews, the following observations were made.

Hands-on training and demonstrations These are very effective because it gives the students a chance to do something fun and engaging and were popular with the students. However, to be effective they do have to be done in reasonably small groups, which is problematic when trying to change the behavior of a large number of students.

Instructor-led training This was rated highly in both the online survey and in the focus groups. However, the focus groups indicated that this was only effective in smaller groups and

³ Pew Internet and American Life Project. *Demographics of Internet Users*
http://www.pewinternet.org/trends/User_Demo_6.15.07.htm

⁴ Alloy Media + Marketing. *College Students Surf Back to Campus on a Wave of Digital Connections*.
http://www.harrisinteractive.com/news/newsletters/clientnews/2006_alloy2.pdf

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only when the topic was focused solely on fire safety. For example, in Resident Assistant (RA) meetings held at the beginning of the year there is a lot of information given out to the students, including fire safety. As a result, it gets "lost" among all of the other topics. In addition, students are busy getting to know one another and catching up with their friends so they are not giving their full attention to what is being said or it is not being absorbed.

Email This is not an effective method unless it is from a peer or a recognized and respected authority figure. One comment was "the delete key is my most frequently used key." Today's students are inundated with email from a variety of sources and unless the subject line is very compelling or they recognize the source, it is not going to work as a delivery platform for information.

Video Considered a highly effective when used with the right conditions, but with very specific constraints.

- Do not plan on the students downloading it to their MP3 players or cell phones for several reasons. The first is that it will cost them money to do it, so they aren't going to. The second is that it is not something they are going to watch over and over again, so they have no reason to download it. The last is that many of the students do not have the devices to handle video (yet).
- For web-based videos, they have to be short, no longer than four or five minutes. This demographic is very used to seeing videos on [youtube](#), so look at that as a model for the type of videos and their duration.
- They have to be entertaining or engaging (again, think "youtube").
- For them to go there and watch it there has to be an incentive and it has to be highly engaging or they are recommended by a peer or friend.
- Humor is the most effective theme that emerged, although it was recognized that fire and burn safety is a difficult topic to make "funny."

Incentives It helps dramatically if there is an incentive to encourage the students to attend a program, watch a video or become involved in an activity. What was found was that the incentive did not have to be significant or even guaranteed. Students said that they were willing to participate for the chance to win an iPod, or for a gift card to download a couple of songs online, or for free coffee. In other words, sometimes the threshold to encourage a student to be involved is not that high.

Advertisements and flyers The remaining methodologies (flyers and advertisements in various locations) were rated low. They are useful in conjunction with some of the other communication methods, but they should not be considered as primary communications tools with this demographic.

OTHER FACTORS

While not a part of this survey, there are other noteworthy trends that should be considered when developing tailored fire and burn safety educational programs.

MARKETING FIRE SAFETY

The following was drawn from an article that appeared in the January 2007 issue of Campus Firewatch. (©Copyright 2007 Used with permission)

Social Responsibility

One of the characteristics of the student demographic is their propensity towards socially responsible issues and products and their involvement in these issues. According to research published by Alloy Media + Marketing, in its 5th annual College Explorer Study, they reported that 33% of the students surveyed “prefer brands that give back to the community, are environmentally safe, or that are connected to a cause. Together, these socially responsible characteristics surpassed paying more for a brand with a great image (16%) or preference for a brand used by celebrities (2%) by wide margins in their influence on discretionary spending. **Substantially, one in four students (24%) has purchased a product this year specifically because it was socially conscious.**” (emphasis added)

Added to their social awareness when it comes to purchasing items is their involvement and volunteerism. Approximately 45% of the students are active volunteers, either on their own or through the school, fraternity or sorority, according to the same study.

“Asked about motivation, students who volunteer said they do so simply to help other people (55%) and to do their part as a community member (39%). Importantly, among those students who volunteer, forty-nine percent said that it makes them feel good about themselves. The report shows that helping others and contributing to good causes were far more important to students than philanthropy to help them get a job or because it looks good on their resume (18%).”

As part of the survey, students were asked what brands they most admire and, in a prepared statement by Samantha Skey, senior vice president for Alloy Media + Marketing, “We found that students were most likely to believe that companies who weave their social messaging into their brand DNA – from advertising to product packaging and events, are the most committed to their causes.”

“Watch for the ‘greening’ of the college market and their \$182 billion in aggregate spending power to have a big effect on brand positioning and campaigns in the coming year,” reported Dana Markow, vice president for Harris Interactive, which conducted the survey for Alloy Media + Marketing.

Social Interaction

Social interaction among students has changed over the years. Because of the explosion of technology on campuses, students no longer depend upon the practices that many of us may remember from our days in college.

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A great example of this is outlined in the book "My Freshman Year" where an anthropology professor went back to school (anonymously under the pseudonym of Rebekah Nathan) as a freshman to learn more about what made today's students "tick." She lived in a residence hall as a freshman student, albeit an older one, and made numerous observations during her time.

One of the more interesting ones was on Super Bowl Sunday. The residence hall had advertised widely that there were going to be two wide-screen televisions in the lounge along with free food. However, when Nathan stopped by, there were only five students in there and one of the televisions was tuned to another television show. A similar turnout had occurred for the World Series several months earlier.

She then proceeded to walk through the residence hall and observed that many of the students were in their rooms watching the game on their own televisions in their own small circle of friends. This, coupled with earlier observations, led her to the conclusion that because of technology students aren't as reliant on social gathering events such as movie-nights to meet with their friends or to even make new ones. Because of the "always in touch" nature of today's society, students are able to spontaneously gather together their friends from disparate locations using cell phones or instant messaging.

Morrison adds to this. "The campus crowd's inherently concentrated nature makes it highly conducive to word of mouth, arguably the most influential behavioral driver among all young adults. This dynamic increases exponentially when coupled with the power of the Internet, whereby a student can send a single message instantaneously to a mail list of literally a hundred or more recipients."

Techniques used by marketing firms

In reaching this group, creativity is needed, whether you are marketing fire safety or cellular phone service.

Newspapers

At a time when readership of mainstream printed newspapers is on the decline, students read their campus newspapers on a regular basis, according to the Wall Street Journal. In a survey by Student Monitor, it was reported that 71% of the students read the school newspaper while only 46% read the print version of a national paper in a typical week.

This isn't lost on companies trying to reach out to this demographic. An example cited by Wall Street is Wal-Mart. "Advertising in college newspapers is highly targeted and comparatively efficient way to reach these students," said Linda Blakely, senior corporate communications manager for Wal-Mart.

"Traditional media platforms are less and less relevant to a consumer who's tuned-in nearly every free moment of their day," said Skey. "Gaining their attention and ultimately their loyalty requires marketers to think about all the spaces that are relevant to the daily campus experience, and connect with them in meaningful ways both online and off for the most impact."

Ambassadors

Students are far more receptive to information given to them by their peers. Building on this, one of the tactics used by marketing firms that specialize in reaching students are "ambassadors," which are students that are part of a network.

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Microsoft is using this approach. "We have 100 ambassadors," said Brandon Evans, managing director for Rep Nation in an interview with Campus Firewatch. "They were flown out to Redmond (Microsoft's headquarters) for training. When they return to their campuses they create their own (marketing) plan, that we approve, and execute it."

These plans can include a number of different strategies such as posters, flyers and a large amount of social networking on websites such as myspace.com. "They send out information to relevant listservs and work with professors and even make presentations in classes. Some professors even give them extra credit," reported Evans.

"College students look to their friends above any other influence for guidance and approval. The increase in 'friend' access and the evolving definition of 'friend' affords peer networks greater import than ever," said Skey.

In building this network of ambassadors, Rep Nation recruits students online. They are then interviewed and, if selected, they receive training either online or in person. "We have a management portal called Rep Ware where the students can share ideas about what works, can upload photos, fill out reports, share files and more," said Evans.

Rep Nation works with the ambassadors and guides them in developing programs, but also leaves them flexibility to develop a program that will work on their own campus. Currently, there are 30,000 students participating as representatives.

So how does all of this relate to marketing fire safety?

Today's students represent an unparalleled opportunity to impact their fire-safety behavior. According to Morrison, "...college students represent tomorrow's big-ticket spenders whose brand preferences are developing today." This could also translate into their fire-safety behaviors for the future.

Creativity is the word of the day when it comes to trying to deliver fire safety information to today's students. It is still possible to use some of the "old" techniques, but they have to be packaged differently or creatively. Many students perceive fire safety as "kiddy stuff" because, as was said earlier, the message never matured with the audience and the last exposure they had was in elementary school learning how to crawl low under smoke.

Some of the feedback from college students about what works is that it has to be graphic, in your face, relevant and interesting. Using peers instead of authority figures is far more effective. Free stuff is always well received.

Using peers

Building on the practice used by Rep Nation of "ambassadors," some schools will use other students to help spread the message of fire safety. At the University of Massachusetts-Amherst, for example, there are students who are also members of the Amherst Fire Department and function as a full engine company. Using these students during fire safety events is a great way to draw in other students. Everyone loves a fire fighter.

Even if you don't have a similar program on your campus, actively involving the local fire department in the activities is a great draw. A fire truck is a huge "billboard" that serves as an attention-getter, especially if it is parked in the middle of campus in a high-traffic area.

One school conducts aggressive fire safety training for its resident assistants every summer. As a result of this highly-interactive training, the RAs are more motivated to enforce the fire safety regulations and, probably more importantly, they now appreciate the reasons behind the rules and their importance. They communicate this with the students on their floors, and it has resulted

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in almost no fires and a significant reduction in false alarms and violations. Students are more receptive about hearing this from a peer than from an authority figure.

Social Awareness

All of this ties back to the earlier observations about students being socially aware and involved. Students are looking for a cause to be involved with and to volunteer their time to make a difference in the world. Fire safety education can be a great way to fulfill this need and, at the same time, educate a core group of students who can reach out to their peers.

Audience

Knowing your audience is always critical, no matter what you are trying to accomplish. In this day and age, people are reluctant to develop stereotypes based on the sexes, but fire safety is one of them where it is obvious. At a number of programs that I have observed at campuses, women are far more responsive to the fire safety messages than the men. While this is certainly not universally true, it is something that seems to be more prevalent.

Sparky the Dog is an example of an old, established technique. Students in kindergarten will flock to Sparky, hang on him and follow his examples. How will Sparky do on a college campus? Women love having their picture taken with Sparky and are far more receptive to him coming up and talking with them than the male college student, who is "too cool" for this type of stuff.

Another example is that of the remote-controlled robots, such as fire trucks and fire hydrants that many fire departments use for teaching children about fire safety. Women don't mind having a conversation with Freddy the Fire truck and will even give him a kiss and have their picture taken sitting on him.

So, while there it might be easier to get women involved and interested in the fire safety message, the challenge is now how to reach the men. One of the lessons learned from some of these programs is that where the women are, the men will follow.

At one school, the sorority system asked the fire prevention officer to hold fire safety training for all of the sorority system's presidents and risk managers. The training was held in one of the sororities and part of it involved having about 30 women out on the front lawn learning how to use fire extinguishers. Up and down the street, all of the fraternities' front porches were crowded with men, watching the training.

In the days following, the fraternities were calling the fire prevention officer, asking why they had not been invited to participate. The next time the training was held, it occurred in a fraternity and there were representatives involved from both the fraternities and sororities this time.

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ALCOHOL

Another key factor in looking at student attitudes and behavior as it relates to fire and burn safety is the significant role that alcohol consumption has in the fire deaths.

The following was drawn from an article that appeared in the February 2007 issue of Campus Firewatch. (©Copyright 2007 Used with permission)

The profile of students drinking at campuses is changing. "Over time, the percentage of abstainers has risen as has the percentage of heavy episodic alcohol users" reported Beth DeRicco, associate director of The [Center for College Health and Safety](#) (which operates The U.S. Department of Education's Higher Education Center for Alcohol, Other Drug Abuse and Violence Prevention). This is creating a spectrum of drinkers where each end of the spectrum is growing.

There are a number of contributing factors impacting student drinking. In the report "[A Call to Action: Changing the Culture of Drinking at U.S. Colleges](#)" published by the U.S. Department of Health and Human Services, these factors include:

- Living arrangements, where drinking is highest in fraternities and sororities followed by residence halls and then by off-campus housing.
- Colleges with drinking problems include those where the Greek systems dominate and where the athletic teams are prominent
- First year students
- Males
- Whites

While the report may indicate that the lowest amount of drinking is occurring in off-campus occupancies, this is countered by the fact that almost two-thirds of the students in the country live off-campus, most are older students and therefore have easier access to alcohol and there are far fewer restrictions on behavior in off-campus housing.

Furthermore, almost 80% of the fire fatalities identified by [Campus Firewatch](#) have occurred off-campus and one of the contributing factors in a number of them has been impaired judgment from alcohol. This is reinforced by the findings of a study done by [USA TODAY](#) where in over half of the 43 fatal fires studied at least one of the students that had died had been drinking. The average blood alcohol count, where available, was 0.12 with a high of 0.304.

Even if the students living off-campus are drinking less than their peers on-campus or in Greek housing, the impact of their actions is clearly more tragic.

A survey by the [Core Institute](#) at Southern Illinois University provides a profile of who is drinking and how much.

Average Number of Drinks per Week

| Year in School | Male | Female |
|----------------|-------|--------|
| Freshman | 7.39 | 3.86 |
| Sophomore | 8.24 | 3.67 |
| Junior | 9.58 | 3.94 |
| Senior | 10.17 | 4.59 |

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Definitions

There are some terms and definitions that need to be clarified when it comes to looking at the campus drinking problem.

A heavy episodic alcohol user, or what is referred to as "binge drinking" in some studies, is someone who drinks three or more times in the previous two weeks and drinks to drunkenness with the intent of getting drunk, reports DeRicco. "What is troubling is that a heavy episodic alcohol user can be a functional student," said DeRicco. These students are not realizing their full potential and may be suffering from a number of alcohol-related health issues and developing troubling patterns that will impact their future significantly.

According to the [National Institute of Alcoholism and Alcohol Abuse's](#) definition of binge drinking, "The 5/4 definition of binge drinking is where a 'binge' is a pattern of drinking alcohol that brings blood alcohol concentration to 0.08 gram percent or above. For the typical adult this pattern corresponds to consuming 5 or more drinks (male) or 4 or more drinks (female) in about 2 hours."

The term "drunkenness" refers to when someone reaches the legal limit of intoxication and beyond. In many states, for people under 21 it is a blood alcohol count (BAC) under 0.02 and 0.10 for people 21 or older. Since the drinking age in all states is 21, having a BAC of 0.02 indicates that the person has been drinking.

Tolerance has nothing to do with a person's blood alcohol count, according to DeRicco. Two different people can be legally intoxicated, but one might not appear as drunk because he or she is able to tolerate higher levels of alcohol. "Women metabolize alcohol differently than men do," said DeRicco. "That has to do with a higher percentage of body fat. Generally, a woman would get more intoxicated than a man on the same amount of alcohol."

How many students are heavy episodic drinkers?

In a study published in 2002 by the Boston University School of Public Health it was reported that 44 percent of the students randomly surveyed had been involved in "at least one heavy-drinking episode in the year prior to the survey, a percentage that has not changed since 1993." Another study had similar results.

In the report "Healthy People 2010" published by the U.S. Surgeon General and the U.S. Department of Health and Human Services, binge drinking was identified for specific reduction, from 39 percent to 20 percent by the year 2010. "Binge drinking is a national problem, especially among males and young adults," notes the report. "The perception that alcohol use is socially acceptable correlates with the fact that more than 80 percent of American youth consume alcohol before their 21st birthday, whereas the lack of social acceptance of other drugs correlates with comparatively lower rates of use."

An interesting fact that emerged in a study from the [Harvard School of Public Health College Alcohol Study](#) was that in states where there are fewer adults who are binge drinkers and with strong laws that discourage excessive consumption, the number of binge drinkers on campus is lower.

"What we discovered is that a student who goes to school in a state with fewer adult binge drinkers is less likely to be a binge drinker," said Toben F. Nelson of the Harvard School of Public Health College Alcohol Study in a prepared statement. "These states also tend to have well-developed alcohol control policies." These include, according to Harvard, states that:

- Mandate registering kegs
- Make it illegal to drive with blood alcohol levels of 0.08 percent or higher

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- Place restrictions on happy hours, open containers, beer sold in pitchers, and billboards and other types of alcohol advertising.

The NIAAA supports this finding in one of their publications, where they report that, "Prevention strategies that may be especially useful in curbing young adult alcohol use are those that focus on restricting the availability of alcohol. Such measures include raising the cost of alcohol through taxes, limiting where and when alcohol can be consumed, and enforcing policies that help to reduce problems such as drinking and driving."

What is valuable in looking at the alcohol problem on campus is to compare it to society at large. The NIAAA reports that while studies have found heavy alcohol consumption among people in their twenties, whether they go to college or not, some surveys have found a lower percentage of students drinking than non-students. However, when the students do drink, they are drinking in greater quantities than their non-student peers.

On the positive side, students stop these drinking practices more quickly than the non-student and have a lower rate of alcohol dependence.

The impact of alcohol on campuses

According to the latest statistics from NIAAA:

- 1,700 college students die from alcohol-related unintentional injuries
- Almost 600,000 are injured
- 97,000 were victims of alcohol-related sexual assault or date rape
- 400,000 students reported having unprotected sex
- 100,000 students reported having been too intoxicated to know if they consented to having sex
- 25% reported academic consequences of their drinking, including receiving lower grades overall
- 2.1 million students drove under the influence
- 11% reported damaging property while under the influence
- 31% of students met the criteria for a diagnosis of alcohol abuse

Making Change

In the DHHS report, the difficulty of implementing change was highlighted because of the nature of alcohol in campuses across the country.

"The tradition of drinking has developed into a kind of culture – beliefs and customs – entrenched in every level of college students' environments," states the report. Some of the contributing factors include:

- Establishments close to campus that sell alcohol and depend upon students for their financial success
- Customs on campus that promote drinking such as advertisements at college sports arenas (or even arenas that are named after alcohol distilleries or breweries)
- Alumni that continue the alcohol tradition at sporting and alumni events.
- Environmental and peer influences that actively promotes drinking as a rite of passage

Making a change is difficult for varied reasons, but one of the leading ones, according to the DHHS report, is the perception that it is an unsolvable problem. "When schools have made efforts to reduce drinking among their students – and many have made considerable effort – they haven't had significant, campus-wide success. With each failed effort, the image of college

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drinking as an intractable problem is reinforced, administrators are demoralized, and the likelihood that schools will devote resources to prevention programs decreases.”

Drinking and fire safety

There have been some documents and studies published to provide a linkage between alcohol consumption and its role in fire fatalities that are widely cited. Unfortunately, some of the research used in preparing these studies is quite dated, ranging from 1972 to 1998. The result is that, unfortunately, we do not have a current view on the connection between alcohol consumption and fire injury and fatality.

Some of the more current data comes from the NFPA which reports that from 1999 to 2002, an estimated 10 percent of the fatalities in fires were impaired by alcohol. However, since there are different reporting requirements regarding the BAC of victims, this data may vary from state to state, making a national comparison difficult.

Anecdotally, however, fire chiefs in college communities agree that alcohol consumption among students is a significant problem that needs to be addressed. In a number of fatal fires looked at by Campus Firewatch, impaired judgment from alcohol consumption has been one of the contributing factors to the deaths.

Campus Firewatch worked closely with USA TODAY in helping the newspaper prepare a major story on the impact of alcohol on campus-related fire deaths. Research conducted by USA TODAY of 43 fires that killed 62 students found that:

- In 59% of the fatal fires, at least one student who died had been drinking
- In 28% of the fires the smoke detector was absent or had been disconnected
- 66% of the victims were juniors or seniors
- 65% of the victims were male
- 25% of the fatal fires occurred following a party
- In 21 of the cases where an autopsy indicated the blood alcohol content, the average was 0.12 with a high of 0.304
- Over half, 56%, of the fires occurred on the two weekend days, Saturday or Sunday, with 44% occurring during the rest of the week

Alcohol and smoke alarm response

Some of the most compelling research is being conducted by [Dr. Dorothy Bruck and Michelle Ball from Victoria University in Melbourne, Australia.](#)

In a study conducted by Bruck and Ball, students were given controlled amounts of alcohol to drink and then allowed to fall asleep in their own beds. Once they were fully asleep, they were exposed to gradually increasing levels of sound that simulate smoke alarms and their response was measured. Their response while sober was measured to determine a baseline response as well as their response at 0.05 BAC and 0.08 BAC.

It was found that when students have been drinking it takes a much louder alarm sounding (95 dBA) to respond to smoke alarms than when they are sober. The normal smoke alarm is required to sound at 75 decibels (dBA) at the pillow.

What was troubling is the low level of inebriation (0.05 BAC) that caused the response capability to significantly deteriorate. In 36% of the trials the test subject did not respond until the alarm

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level was at 95 dBA or did not respond at all when they were at 0.05 BAC. This increased to 42% at the 0.08 BAC.

What is notable is that while the response capability decreases as the blood alcohol level increases, it is not as significant as the increase from sobriety to 0.05 BAC. In other words, it does not take much alcohol to cause a significant decrease in the ability to react to an alarm. According to the study, "The meaning of this is that even at what many would consider to be low to moderate levels, alcohol can seriously affect a sleeping person's ability to respond to their smoke alarm. In fact, many participants reported feeling only slightly 'tipsy' at bedtime in the 0.05 BAC condition."

Alcohol is a significant problem on many campuses, and it has a direct impact upon fire safety as well. According to the study, "Under benign circumstances, unimpaired adults aged 18 to 64 respond well to smoke alarm signals, and are at a comparatively low risk for death. However, alcohol ingestion greatly increases fire fatality risk across all age groups." The report continues, "The increased mortality rate for those who have been drinking is a very important issue for young adults, who are perhaps less experienced drinkers than their older counterparts, and whose lifestyle traditionally provides more opportunities for partying, but who also have more deep sleep."

The report lists a number of ways that alcohol impairment can impact upon a person's response (or non-response) to a fire alarm, including:

- Failure to hear alarm
- Failure to correctly interpret alarm
- Inappropriate response, such as a failure to avoid a dangerous pathway
- Poor motor functioning, e.g., poor balance and coordination
- Recovery rate from burns is significantly worse for alcoholics, meaning that they may suffer death from more minor injuries than non-alcoholics.

Smoking and alcohol

In an effort to determine the linkage between smoking and alcohol abuse, a study was undertaken by Drs. Grucza and Chen. In it, they found that there is a definite connection between alcohol abuse and smoking among adolescents aged 12 to 20. According to their research, "Both academic studies and casual observation support the view that smokers tend to drink, and drinkers tend to smoke. New research using nationally representative data from the U.S. finds that smokers – particularly adolescent smokers – clearly have a greater vulnerability to alcohol-use disorders (AUDs) than do non-smokers."

They go on to point out three key findings of their research:

- "Popular and clinical lore support the strong connection between smoking and alcohol consumption.
- Adolescent smokers appear to have a greater vulnerability to developing alcohol-use disorders.
- Results indicate that smoking "primes" the brain for subsequent addiction to alcohol and possibly other drugs."

Alcohol has been a part of college life for decades. Its impact upon fire safety has always been informally acknowledged by those that have to deal with it on a daily basis. What is needed is a concerted effort to use the loss of life that is occurring from fires where alcohol impairment is a factor as a mechanism to reduce both troubling problems- drinking and fire deaths.

HUMAN BEHAVIOR

The following was drawn from an article that appeared in the March 2007 issue of Campus Firewatch. (©Copyright 2007 Used with permission)

How people behave, or react, during a fire is an intense area of study that is conducted by a handful of researchers. "The goal is to get a better understanding of the behavior of people during fires," explained Dr. Guylene Proulx, a senior researcher with the National Research Council Canada and one of the leading experts in this field. "From this knowledge, we try and see what changes can be made in buildings or in training the occupants so they can be better prepared for an emergency."

There are a number of methods that are used in gathering the information needed that include investigations following significant incidents, observing evacuation drills and laboratory studies.

"Following a major event we interview the survivors," said Proulx. They are asked a number of questions such as how they became aware of the emergency, what they thought of doing, what were their actions and why they reacted the way they did. "This helps us understand what goes through the minds of people and how prepared they were."

Observing how people react during an evacuation drill also provides valuable information to the researchers. The benefit of conducting these studies is that it is possible to observe how people react under different conditions. "We may decide to do the drill under emergency lighting, or using a voice communication system, or with staff present or absent," said Proulx. By changing these variables it is possible to observe the different reactions.

A third type of study is those that are done under laboratory conditions, such as the ones conducted by Dr. Dorothy Bruck and Michelle Wall at Victoria University in Australia. In one recent study, the reaction of students to the sound of a fire alarm while they were sleeping was observed under varying degrees of inebriation. (The results of this study were reported in the February 2007 issue of Campus Firewatch.)

What are some of the findings?

"One of the things that should be demystified is the concept of panic," said Proulx. The media, movies and television often portray people as panicking when faced with an emergency or crisis, but this is not held up by the research done by Proulx and others.

"In the past we have said people will panic and do irrational behavior," explained Proulx. "Irrational behavior in fires is rare, less than 2 percent. On the contrary, people try to do the best with what they know." In a study by Proulx, she explains, "The public often use the word 'panic' as synonymous for being frightened, scared, nervous or anxious; usually it does not have the implication of irrational behavior."

Getting people to react

When a fire does break out, it is critically important to minimize the time between onset of the fire and suppression. Along this timeline, the occupants of the building must be alerted to the emergency so they can react accordingly. However, getting people to properly respond to the cues or signals is difficult.

"Another behavior that we have observed is that in the initial stages of the fire, when it is not nearby and they sense or smell smoke, most people ignore the situation and continue what they

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are doing," said Proulx. "Maybe they will eventually investigate what is going on and move towards the source of smoke, which is a natural behavior, but this means that, unfortunately, the person is going towards the fire, which may place them in greater danger."

The assumption is that people will react immediately to an alarm, but that is not always the case, sometimes with fatal results. In a recent fatal fire in a residence hall, the two occupants of one room did not evacuate immediately when the alarm was sounded. By the time they did decide to evacuate, the corridor outside of their room was filled with smoke. One of the occupants went in one direction and was able to escape. The other, however, went in the direction of the fire and was killed by smoke inhalation.

In addition to getting people to react to the alarm, the time for people to actually start evacuating has to be considered as well. In a study by Proulx, it was found that the average time to actually begin evacuating was approximately three minutes. During this time, according to the study, occupants "started getting dressed, gathering children, pets, purse wallet and keys. Some put away supper, had a look on their balcony or gave a call to the superintendent before leaving their apartment." The study goes on to report, "It is also interesting to know that in all these evacuation drills, many occupants (maybe as much as half the occupants present) never left the building and many refused to answer the firefighters who knocked at their door."

What Proulx has also found is that there are some cultural differences when it comes to people's response to fire safety. "In North America, there is a reluctance to look over-anxious in responding to an emergency," explains Proulx. "This is something that the youngsters and teenagers are learning and are prone to that behavior. It's not cool to get up and start running, you are supposed to look under control all the time."

Cues and Signals

A great deal of reliance is placed upon the fire alarm signal to alert the occupants and initiate an evacuation. However, according to Proulx's study, "The fire alarm signal is probably the least reliable cue of a fire since there are a large number of false alarms, test alarms or prank alarms in some buildings that have reduced the credibility of this signal as an indication of a real fire." Even a burning smell or smoke may cause people to investigate the cause rather than sounding the alarm or beginning to evacuate the building. The most reliable method of initiating a proper response is the use of a voice communication system that provides specific directions to the occupants, according to Proulx.

Along with the use of a voice communication system, it is important to change the environment in some manner. Examples include raising the lights in a theater, shutting down the music in a bar or turning off the background music in a store. All of these can serve as attention-getting strategies that, coupled with instructions provided over a voice communication system, will cause people to react to an emergency.

Protect in Place

One of the more telling findings coming from the human behavior research is that of the "protect-in-place" philosophy of fire protection in high-rise buildings. In a number of incidents investigated by NRC and the National Fire Protection Association, many of the victims were found in stairways and corridors, while those that stayed in their rooms survived the fire. Not only did the victims die while trying to evacuate, a number of them also died in locations remote from the fire.

One of the incidents referenced in a report by Proulx, *High-rise evacuation: a questionable concept*, is the Seton Hall fire in 2000 that killed three freshmen and injured over 50 occupants.

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This incident is cited as an example where all three of the victims died during the evacuation, yet there were at least two students that slept through the fire and were found later in the day, uninjured. One of the students was on the fire floor.

The arguments that Proulx makes for the protect-in-place approach in her study include:

- *The long time delay to start evacuation after perceiving the fire alarm signal, noticing fire cues or receiving a warning. This can be due to a number of factors such as the non-recognition of the fire alarm signal as a fire alarm, lack of training in the emergency procedure, large number of nuisance alarms, conditions and state at the time of warning, etc. When the occupant finally decides to leave their compartment the fire has been burning for a substantial period of time producing a considerable amount of gas and smoke which makes it the worse time to travel the corridors and stairwells.*
- *The travel distance to reach ground level could be very long for occupants of the upper floors.*
- *There is already a limited response to a fire alarm signal.*
- *People with mobility limitations are occupying high-rise building, they cannot be expected to evacuate by themselves.*
- *During fires the means of egress tend to become contaminated with gas and smoke.*
- *The suites or compartments of residential, hotel and dormitory buildings offer means to defend-in-place such as sheets, towels or tape to block up doors and cracks from which smoke could penetrate.*
- *Occupants have access to a telephone to call for help and to obtain information.*
- *If occupants are expected to stay-in-place when the fire alarm signal goes off, the number of prank alarms should be considerably diminished since there will be no "fun" at pulling an alarm for which no one has to get out in their pajamas!*
- *Finally, the stay-in-place approach appears simple for occupants to learn, since many are already doing it.*

One of the strongest arguments made in the research paper for supporting this approach relates to the location of the victims in all of the fires studied.

"The main argument against the stay-in-place approach can be summarized as the: 'what if...?'. What if the fire spreads out of control? What if the smoke travels in the ventilation system? etc. However, besides the MGM Grand Hotel fire it was impossible to find a high-rise fire casualty located in an enclosed-compartment, other than the compartment of fire origin, who had not opened the main door during the fire." (emphasis provided by original author.)

Teachable Moments

While significant events, such as 9/11 or even a local emergency, may change people's behavior or attitudes, this change is a brief one and then people fall into their existing habits. As dramatic as the collapse of the World Trade Center was, Proulx said that such an emergency is of such a scale and magnitude that most people can't associate with it and can't visualize it happening in their life.

Another factor is that emergencies do not happen frequently in a person's lifetime, so they do not see the importance of fire safety and training so they can respond properly to an emergency. This is where local events or those in other communities can be invaluable teachable moments in helping to reinforce the importance of fire safety and, hopefully, change people's behavior and attitudes.

There have been cases of communities using incidents that have occurred elsewhere as an opportunity to reinforce fire safety messages for their own citizens. This can be done in a number

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of different ways, such as handing out flyers, canvassing neighborhoods with high student populations or working with the local media.

To take advantage of the teachable moment, it is invaluable to have a media campaign ready to go. The window of time when the local media may be interested in a story is very fleeting before another tragedy takes their attention away. Having "fill-in-the-blank" press releases ready to be distributed with information about the incident and steps that people can take to ensure that such a tragedy doesn't happen to them can be easily distributed after an incident occurs.

When a fatal campus-related fire occurs, Campus Firewatch sends out an alert about the incident along with information that the local jurisdictions can use in preparing a press release in their own community. In addition, an updated Information Sheet is maintained on Campus Firewatch's website (www.campus-firewatch.com) as well as a compilation of the fatal fires identified since January 2000. All of this is information that can be used in working with the media or preparing fire safety messages for students.

An example of the teachable moment was tragically demonstrated in Boston. Boston University suffered two fatal fires within weeks of each other. The first fire killed two students and was caused by an unattended candle in a three-story, off-campus apartment building occupied by students. The second fire occurred in another three-story, off-campus apartment just blocks away from the original fire and was caused by a charcoal grill that had been used on the third-story deck and that ignited nearby combustibles.

After the second fire, eight students were interviewed by BU Today and their comments were posted on BU's website (www.bu.edu). These are very illuminating as to the attitude and views towards fire safety.

"I do think BU has an obligation to try and educate students about fire safety, at least if the students live on campus. Students should know their evacuation routes. I think the e-mails that the dean of students recently sent out were really effective. I know a lot of people who read them. I have smoke detectors and a carbon monoxide detector, but no fire extinguisher. I think I have a pretty good grasp of fire safety, but if faced with an actual fire, I'm not sure how I'd react. I use common sense. Students tend to think that we're indestructible, but we're not."

"I think it's a good idea for BU to teach fire safety and fire prevention at Freshman Orientation. Considering the size of the BU community, I don't think it's all that strange that there have been so many accidents. Statistically speaking, things are going to happen."

"I don't know if it's fair to connect the two fires and say there's a serious problem; it could just be a bizarre and horrifying coincidence. But there certainly is a school responsibility to publicize and encourage fire safety behavior in the off-campus places. You hate for two deaths to lead to more aggressive preventive action, but as time goes on, it shouldn't be hard to send out safety reminders via e-mail; a regular heads-up wouldn't be a costly thing to do. We all have short-term memories, unfortunately."

"It helps to be more aware about where you're living; a lot of people grow up so sheltered that they get into the real world and don't know what's dangerous. I've heard from a lot of people that this is making them want to move back to campus. I know that my dad really wishes that I would."

"It's a personal responsibility; you should be able to take care of yourself. If your parents think you're old enough to live off campus, you should know enough to be cautious and be responsible for your own actions. I think BU handled things pretty well in terms of showing concern and keeping people informed. It's not the school's responsibility if something happens off campus. Even if there was a seminar on fire safety, how many people do you think would go?"

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"The bottom line is students need to be more aware of their surroundings. I think BU's offering a lecture on fire safety or sending out e-mail about fire prevention would make sense, although there's a difference between knowing fire safety and living in a safe building. For example, I think I'm knowledgeable about fire prevention, but there's no fire extinguisher in my apartment off campus. I need to contact my landlord about that."

"We all know we shouldn't leave candles burning, but sometimes accidents happen. We make mistakes. I live in off-campus housing, and I think I know enough about fire safety that I won't catch my place on fire. We don't have a fire extinguisher, although our smoke detectors do work. I've never used a fire extinguisher, but I'm sure I could figure it out. I think responsibility rests with the students. I don't think BU should make something like fire safety classes mandatory. I don't think it would be taken seriously,"

"We have working smoke detectors and a fire extinguisher at our apartment. I don't really know how to use a fire extinguisher, though. These fires were purely accidental, so I'm not sure how effective a class in fire prevention would be. It has good intentions, but I don't think it would fly with students. We learn fire prevention when we're little."

Training

Training is where the most significant change in people's behavior can be made before a fire, according to Proulx. "This is one of the key elements where we can work proactively before something takes place. We can put all of the nice systems in the place to discover and control the fire, but if you don't train people they may very well do responses that will endanger themselves."

Part of the training, when it comes to students, is the importance of letting them know the "reasons behind the rules." In order to change their behavior, it is important that students know the reason that their behavior needs to change. This is a message that has been mentioned a number of times by campus fire professionals as an effective strategy for reaching students.

Reaching students is a difficult proposition, given all of the messages that they are exposed to. "Our message could be designed better," said Proulx. "Involving students is a key to success. That age group, with their cell phones, the MP3 players, their music – it is all changing so quickly that it is difficult for us to keep up with it. Our traditional way is perhaps not the best, and involving them in the tools and messages and key phrases is a plus."

Another component of the training for students is to make sure it is interactive and engaging. A good example is fire extinguisher training, which is a hands-on training experience that many students have never had before. Filling corridors with smoke and then having the students navigate through them as a demonstration sends a powerful message that will "stick" with them.

Changing Behavior

The key to improving fire safety is to change an occupants' behavior and attitudes towards fire. By being better informed, a person is in the position to select fire-safe housing, follow fire-safe practices and know how to react properly when a fire does occur. Through the studies conducted by Proulx and others around the world, strategies have been developed to help ensure that buildings are designed with how people will react to an emergency.

Dr. Rita Fahy with the National Fire Protection Association sums up the value of studying how people react to fires and emergencies very succinctly. "We have to design a building to what people will actually do, not what you hope they will do."

CONCLUSIONS

DIFFICULT DEMOGRAPHIC TO REACH EFFECTIVELY The difficulty is that this is a demographic that is being inundated with information from a multitude of different sources. They are the most sought-after demographic by marketers, which is one of the primary reasons for the onslaught of marketing messages. Because of this, the challenge is to make the fire safety message stand out from all of the other messages they are receiving, both in terms of content and delivery mechanism.

DISTINCT LACK OF KNOWLEDGE The findings of this study showed that, in the group studied, there is a distinct lack of knowledge when it comes to fire and burn safety. Much of this is because the fire safety education stopped when the students were in elementary school and has not started up again until they were in college. The message did not mature with the audience and it is an opportunity to fill in this gap and start them on a new continuum of learning throughout the rest of their lives.

DESIRE FOR MORE KNOWLEDGE With these students, once they became aware of this knowledge gap they expressed a distinct desire to know more so that they could protect themselves, prevent injury and react appropriately to an emergency. It would be a catastrophe to not take advantage of this desire and provide them with the very information they seek.

CREATIVITY IS PARAMOUNT Because of the fact that these students are being inundated with marketing messages every single day, it is mandatory that the burn and fire safety educator be creative in developing an effective program. Campus fire safety officers bemoan the fact that they only get fifteen minutes during freshmen orientation and throw their hands up in frustration. We say that this provides you with the opportunity to develop a program that is different from the entire multitude of other programs being given during these sessions – a program that will stand out and be remembered!

NO MAGIC BULLET Burn and fire safety training can't be given once and assumed that it will "stick" with the students. Multiple messages and multiple media is the answer to ensuring that the information will ultimately get through. By providing ongoing, small, incremental messages and training throughout the year it is possible to have a greater impact on changing student behavior and awareness than having just one, large event. (Still have the large event, but augment it throughout the rest of the year with other activities and communications!)

INTERNET OFFERS INCREDIBLE OPPORTUNITIES This is a generation that has grown up knowing nothing but life with the Internet. They are very comfortable with it, and this provides an incredible opportunity to develop creative material and deliver it very cost effectively. It also provides the opportunity to have the students, themselves, develop content that is relevant to their peers.

CHANGING THE FUTURE In the late 1980s and early 1990s, fire deaths in the United States dropped significantly because of the widespread use of smoke alarms in the home. However, the number of fire deaths has leveled off, and there is nothing on the horizon that will significantly change this in the near future – except for education and awareness.

Fire safety efforts in this country have primarily focused on the very young and the elderly, which means that approximately two-thirds of the nation does not get fire safety information on a regular basis. This "middle demographic" is lacking the basic knowledge they need to protect themselves and to raise a fire-safe generation.

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There are approximately 17 million students enrolled in colleges and universities across the country. This is a huge "captive" demographic and presents an unparalleled opportunity to change their behavior.

Indeed it is 17 million opportunities. By reaching out to these students, making them more aware and empowering them with the knowledge they can use, we have the opportunity to change the face of fire safety in the United States. As they graduate and become the decision-makers of tomorrow, the parents, the managers, the builders and building owners, they will be building a safer and better-informed society.

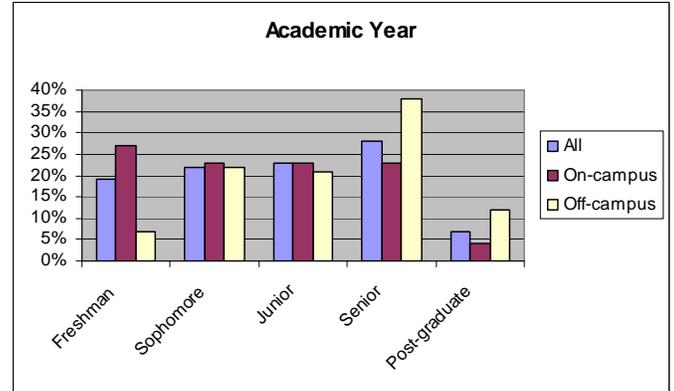
All because we started today, with the 17 million opportunities.

APPENDIX A RESULTS FROM ONLINE SURVEY

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Q1. What year are you?

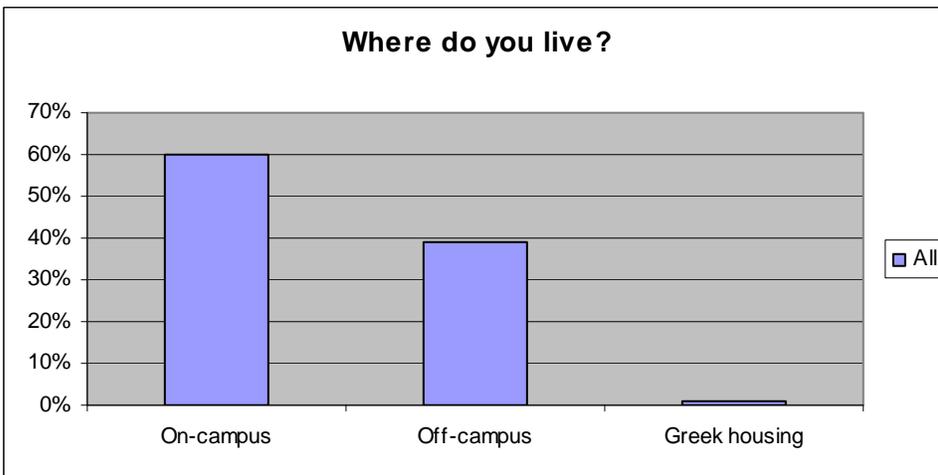
| | All | On-campus | Off-campus |
|---------------|-----|-----------|------------|
| Freshman | 19% | 27% | 7% |
| Sophomore | 22% | 23% | 22% |
| Junior | 23% | 23% | 21% |
| Senior | 28% | 23% | 38% |
| Post-graduate | 7% | 4% | 12% |



Q 2 What school do you attend?

Q3. Where do you live?

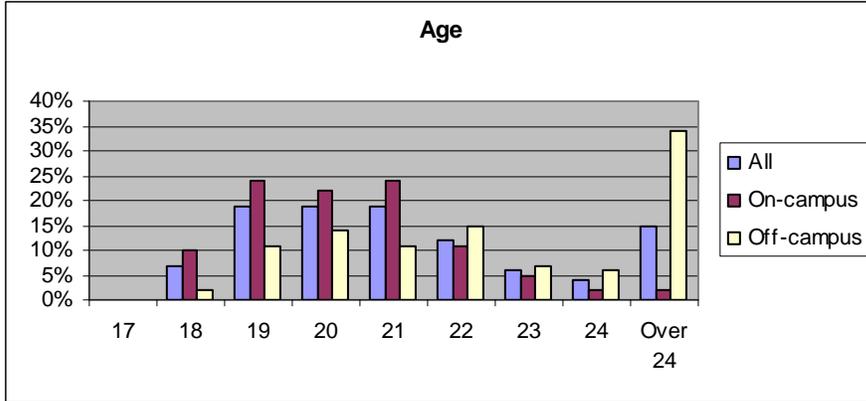
| | All |
|---------------|-----|
| On-campus | 60% |
| Off-campus | 39% |
| Greek housing | 1% |



Q4. What is your age?

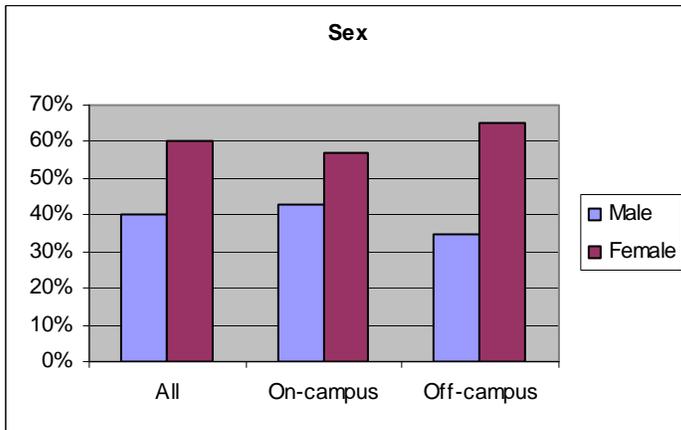
| | All | On-campus | Off-campus |
|---------|-----|-----------|------------|
| 17 | 0% | 0% | 0% |
| 18 | 7% | 10% | 2% |
| 19 | 19% | 24% | 11% |
| 20 | 19% | 22% | 14% |
| 21 | 19% | 24% | 11% |
| 22 | 12% | 11% | 15% |
| 23 | 6% | 5% | 7% |
| 24 | 4% | 2% | 6% |
| Over 24 | 15% | 2% | 34% |

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Q5. Sex

| | All | On-campus | Off-campus |
|--------|-----|-----------|------------|
| Male | 40% | 43% | 35% |
| Female | 60% | 57% | 65% |

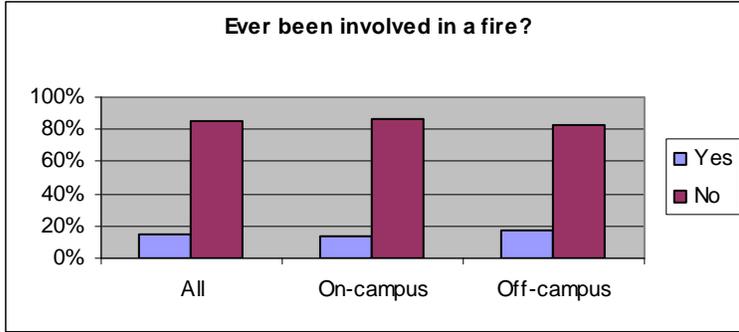


Q6. Have you ever been involved in a fire?

| | All |
|-----|-----|
| Yes | 15% |
| No | 85% |

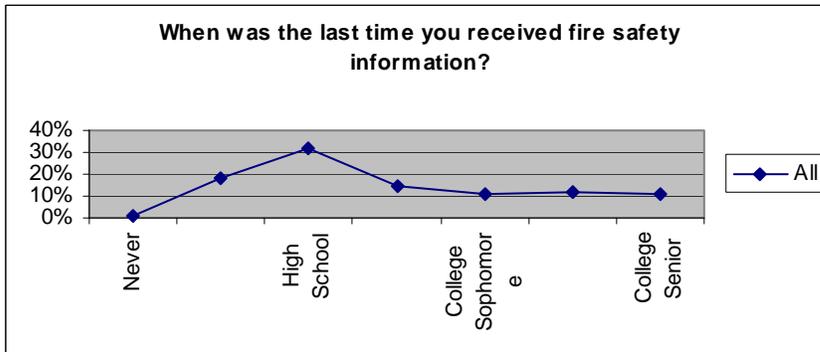
A vast majority of the respondents had not been involved in a fire (85%).

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Q7. When was the last time you received fire safety information?

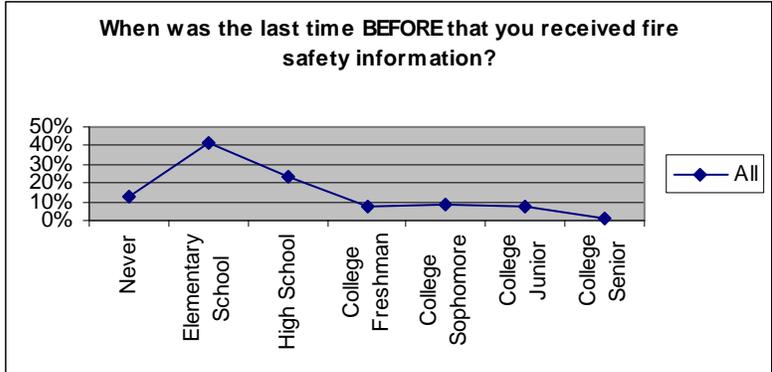
| Category | All (%) |
|-------------------|---------|
| Never | 1% |
| Elementary School | 18% |
| High School | 32% |
| College Freshman | 15% |
| College Sophomore | 11% |
| College Junior | 12% |
| College Senior | 11% |



Q8. When was the last time BEFORE the time listed above that you received fire safety training?

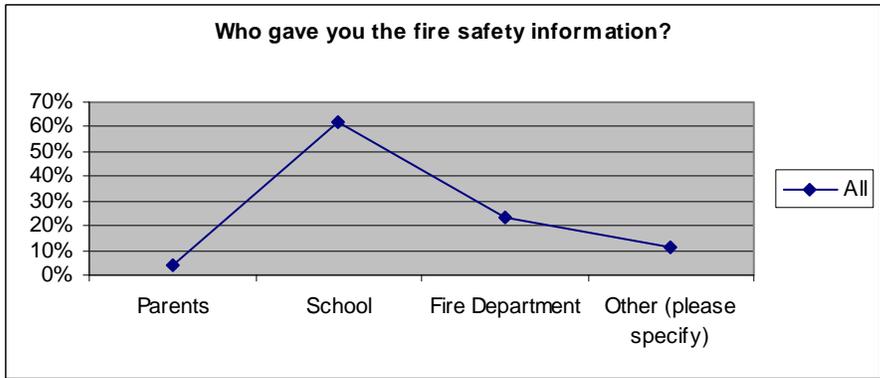
| Category | All (%) |
|-------------------|---------|
| Never | 13% |
| Elementary School | 41% |
| High School | 23% |
| College Freshman | 7% |
| College Sophomore | 8% |
| College Junior | 7% |
| College Senior | 1% |

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Q9. Who gave you the training?

| Source | Percentage |
|------------------------|------------|
| All | |
| Parents | 4% |
| School | 62% |
| Fire Department | 23% |
| Other (please specify) | 11% |



Q10. What do you remember learning?

Q11. What fire prevention programs are done on your campus that you have been involved with? (write "none" if you have never been involved with one)

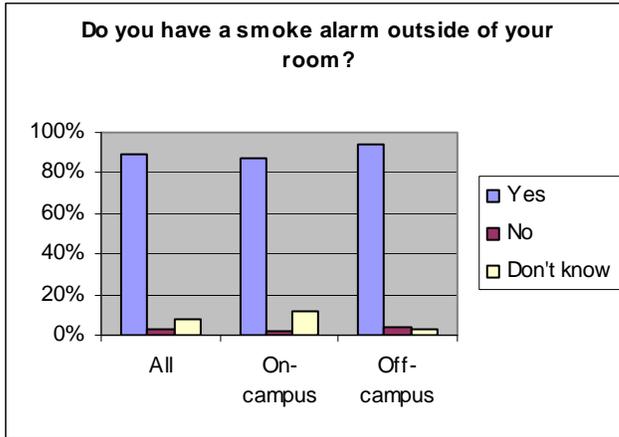
Q12. What is the leading cause of fatal fires in the United States?

| Cause | Percentage |
|------------|------------|
| All | |
| Arson | 2% |
| Candles | 28% |
| Cooking | 13% |
| Electrical | 30% |
| Smoking | 28% |

Q13. Do you have a smoke alarm outside of the room you sleep in?

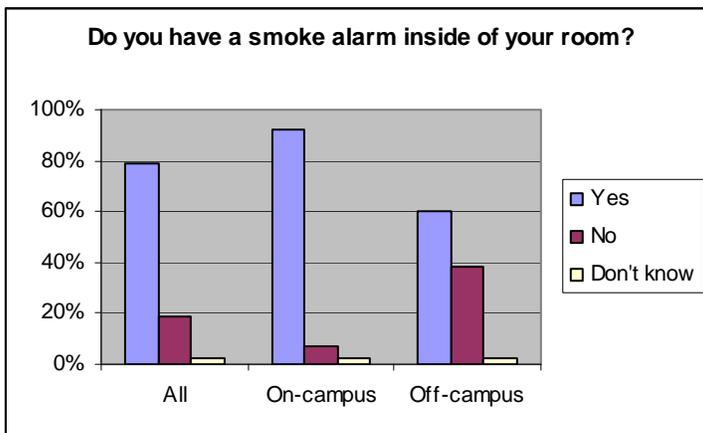
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| | All | On-campus | Off-campus |
|------------|-----|-----------|------------|
| Yes | 89% | 87% | 94% |
| No | 3% | 2% | 4% |
| Don't know | 8% | 12% | 3% |



Q14. Do you have a smoke alarm inside of the room you sleep in?

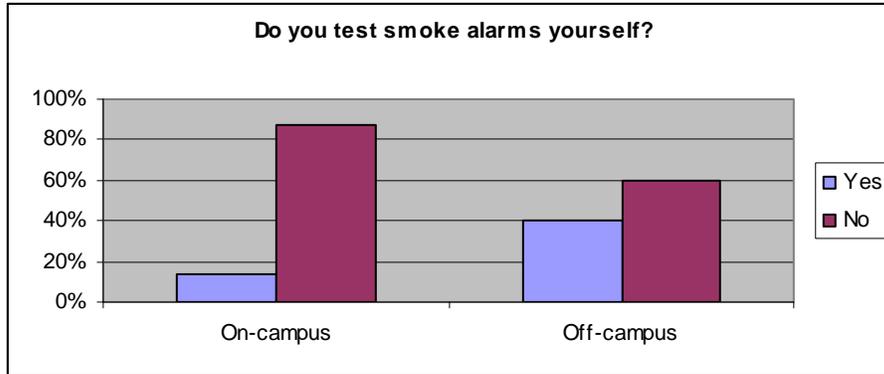
| | All | On-campus | Off-campus |
|------------|-----|-----------|------------|
| Yes | 79% | 92% | 60% |
| No | 19% | 7% | 38% |
| Don't know | 2% | 2% | 2% |



Q15. Do you test the smoke alarm yourself?

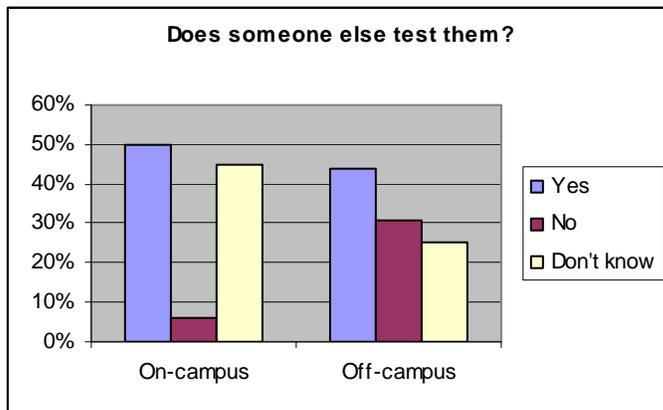
| | All | On-campus | Off-campus |
|-----|-----|-----------|------------|
| Yes | 24% | 14% | 40% |
| No | 76% | 87% | 60% |

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Q16. Does someone else test them?

| | All | On-campus | Off-campus |
|------------|-----|-----------|------------|
| Yes | 48% | 50% | 44% |
| No | 16% | 6% | 31% |
| Don't know | 36% | 45% | 25% |



Q17. How frequently do you test them?

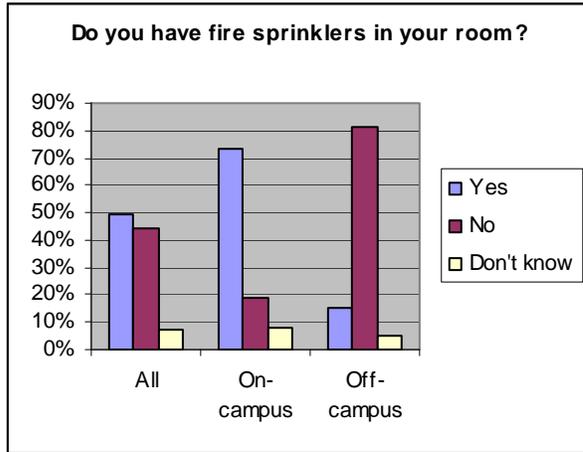
| | All | On-campus | Off-campus |
|---------------|-----|-----------|------------|
| Weekly | 1% | 1% | 1% |
| Monthly | 19% | 18% | 20% |
| Semi-annually | 31% | 29% | 35% |
| Annually | 12% | 10% | 15% |
| Never | 37% | 43% | 29% |

Q18. Do you have automatic fire sprinklers in your room where you sleep?

| | All | On-campus | Off-campus |
|-------|-----|-----------|------------|
| Yes | 49% | 73% | 15% |
| No | 44% | 19% | 81% |
| Don't | 7% | 8% | 5% |

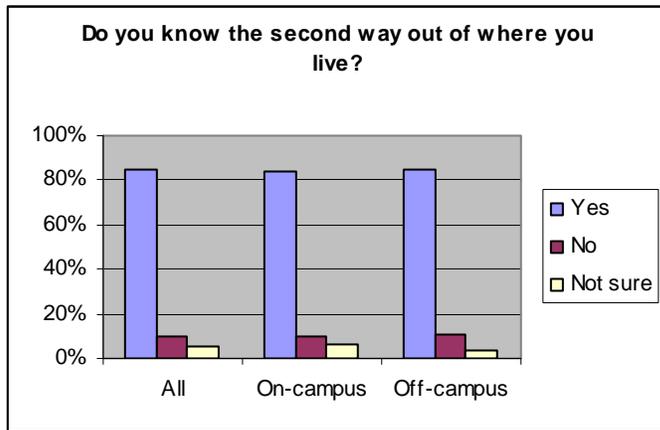
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| | | | |
|------|--|--|--|
| know | | | |
|------|--|--|--|



Q19. Do you know the second way out of where you live?

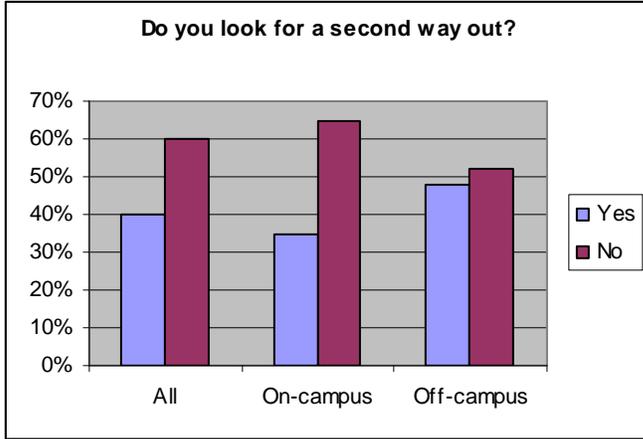
| | All | On-campus | Off-campus |
|----------|-----|-----------|------------|
| Yes | 85% | 84% | 85% |
| No | 10% | 10% | 11% |
| Not sure | 5% | 6% | 4% |



Q20. Do you look for the second way out when you go to a restaurant, nightclub, movie theater, etc.?

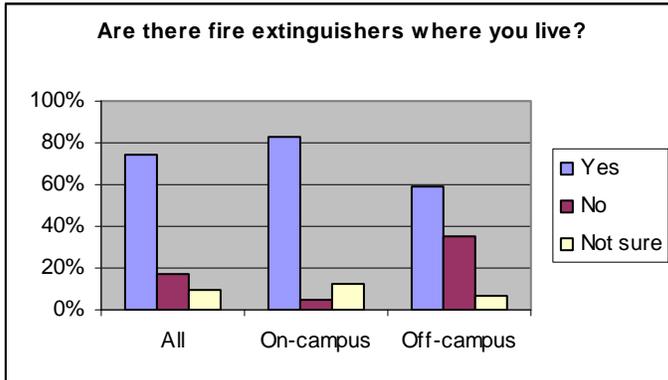
| | All | On-campus | Off-campus |
|-----|-----|-----------|------------|
| Yes | 40% | 35% | 48% |
| No | 60% | 65% | 52% |

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Q21. Are there fire extinguishers for you to use in the building where you live?

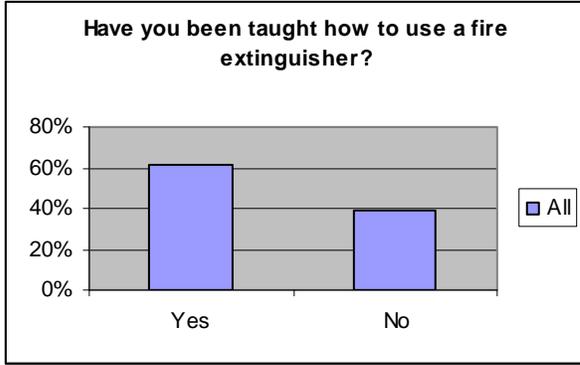
| | All | On-campus | Off-campus |
|----------|-----|-----------|------------|
| Yes | 74% | 83% | 59% |
| No | 17% | 5% | 35% |
| Not sure | 10% | 12% | 7% |



Q22. Have you been taught how to use a fire extinguisher?

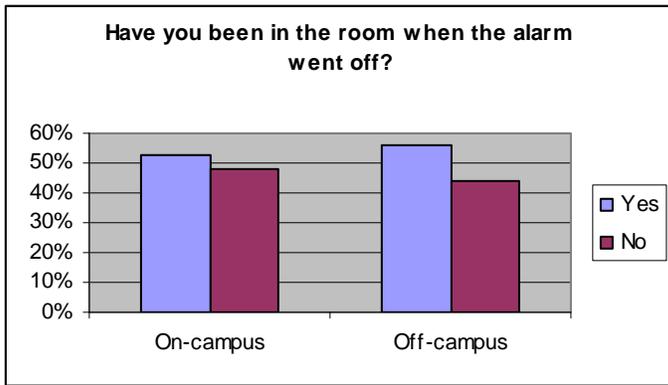
| | All | On-campus | Off-campus |
|-----|-----|-----------|------------|
| Yes | 61% | 61% | 61% |
| No | 39% | 39% | 39% |

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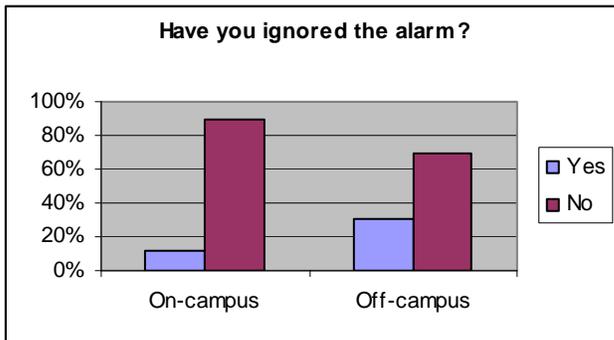
Q23. Have you ever been in your room when the fire alarm has gone off (other than for a fire drill)?

| | All | On-campus | Off-campus |
|-----|-----|-----------|------------|
| Yes | 54% | 53% | 56% |
| No | 46% | 48% | 44% |



Q24. Have you ever ignored the alarm and not evacuated? (Remember...these answers are confidential!)

| | All | On-campus | Off-campus |
|-----|-----|-----------|------------|
| Yes | 19% | 12% | 31% |
| No | 81% | 89% | 69% |



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| Q26. Have others ignored the alarm and not evacuated? | | | |
|---|-----|-----------|------------|
| | All | On-campus | Off-campus |
| Yes | 48% | 51% | 44% |
| No | 18% | 15% | 23% |
| Don't know | 33% | 34% | 33% |

Q27. Why?

Q28. What are the steps you are supposed to do if you have a fire in your room? (fill in as many as necessary, or write "don't know" for the first answer if you aren't sure)

496 responses

Leave/evacuation activities 108
 Don't know 98
 Extinguishment activities 76
 Crawl low 54
 Call 911/alert others 35
 Check door 31

Q29. What are the three leading causes of burn injuries? (write "don't know" if you aren't sure)

Don't know 235
 Cooking 83
 Smoking 37
 Fire 24
 Hot water 16
 Candles 12
 Sunburn 7

In reviewing these free-text responses, they were divided into the categories listed above. A significant majority did not know what the three leading causes were, which indicates a lack of education and training.

Q30. How do you treat a burn injury? (write "don't know" if you aren't sure)

Q31. What are the different categories of burn injuries? (write "don't know" for the first answer if you aren't sure)

Q32. How do you treat a burn injury? (write "don't know" if you aren't sure)

Q33. What is your view/opinion of fire/burn prevention safety?

While the answers varied, there was a common theme that emerged in approximately 20% of the answers – more information and training is needed. This was also indicated in the focus groups

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as well. A number of students indicated that as a result of these surveys and focus groups they came to realize just how little they did know about fire and burn safety.

The following are some of the answers that were given.

absolutely necessary, not enough fire prevention and safety taught

Colleges need to teach more about it and not just hand us a flyer and do a drill every now and then. Safety lectures that are mandatory and possible tests after the lecture need to be given. And if you don't pass the test, you retake the lecture.

Great idea, just don't know all of it

I believe there is a lot of instruction of fire safety going on at some levels of education, but it seems many people still do not know what to do in case of a fire. I also believe that what is being taught is sufficient to prevent fire/burns and that mostly it is simple to remember. People are too careless with things that could start a fire.

I believe there should be more fire prevention programs on campus. I also think that there should be classes offered.

I don't really know much about it to have an opinion.

I don't think we have enough of education about it.

I don't think we were well informed of what to do in the case of a fire at school.

I have enough fire prevention safety information, but not enough information on what to do if a fire actually occurs. I also don't know much about burns or burn prevention.

I just realized how little I know!

I need more information, the last time I learned this stuff was in 5th grade. I think that older students need to be educated again.

I need to have a review, because I obviously don't remember a lot. It would be nice to have a speaker come to talk to the students at our school or even at a local church to hold a discussion.

I obviously don't know a lot.

I personally have not been informed enough

I received it in elementary school, but not much after that.

i should know more

I think everybody should become more aware of the danger of burns and how to treat them properly.

I don't feel that there is enough awareness through high school or college, it's just assumed that students know what to do.

I think it is very important to be reminded about throughout all schooling years. I just think that most kids don't have the knowledge of it and they do not respect how real the situation can be because they have never been in one or seen one. I think it would change things completely if they were shown videos of real life victims or had one come to their classrooms.

I think it needs to be done more.

I think it should be more put out there. I'm sure it happens a lot more than people would like to think, and I think it's important to be educated on the subject just in case it does happen to you, or somebody you know.

I think it should be taught more often so people are aware.

I think it's important ... I should know more.

I think that it is important but not a lot of people know about it.

i think there needs to be more prevention safety training.

i think we could use a little more knowledge especially on the burn prevention because I know I clearly have no idea what to do in that case.

i think we need to be made more aware

I wish I would have been taught more about this subject. I'm not really sure what I would do if I, or someone else got burned.

I'm not aware of the proper precautions.

Information should be more widely available.

it could be covered more

It could be improved

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It is absolutely necessary but it is not taught enough.
It is critical. We neglect it too much and take for granted how easy it is for everything to go up in flames.
it is descent during elementary-high school but it is not so good in universities or colleges.
It is important and needs to be taught more often then just in Elem. School
It is important and should be taught. Many students are ignorant to fire safety
it is important but many people are too indifferently ignorant about it.
It is important but often not made a priority.
it is needed, but highly neglected
it is not taught enough
It is not taught enough. People think they know what to do, but learning it as a kid and assuming you'll remember it forever is not always the case. Common sense is good to use, but people need to be informed, even in college.
it is very important to know and yet not taught enough
it is very useful and seems to be well accepted. I've been meaning to learn more but haven't had the time.
It needs to be advocated more.
it needs to be focused on more
It needs to be more commonplace, not only in grammar schools but colleges and universities as well. Many residence halls currently have multi-level living and it is important for students know how to evacuate these types of buildings in a timely manner and safely!
it needs to be talked a/b more
it needs to be taught more in high school as college as well.. we don't always remember everything because we don't use it a lot.
It should be known
it should be taught and performed through fire drills on a regular basis.
It should be taught in more schools and school fire drills should be repeated regularly. I think smoke alarm tests should be mandatory for all homes
It should be taught more than once a year
It should be taught more.
It would be nice if we were taught it.
it's an important topic that is rarely discussed after middle school.
its both often taught and often forgotten
It's definitely something that needs to be stressed more for high school and college settings. Don't just assume that everyone knows what to do.
it's good to know, i think a lot of people don't know enough about it
it's important for everyone to know, but few people have been educated in such safety
it's important to know from the start. my knowledge of the correct procedure for each is unclear but I know in one case ice can be severely counterproductive.
It's important, but not emphasized enough.
It's important, but often neglected.
its is poorly taught and awareness is lost when you age
It's not shown enough
It's not stressed enough.
It's very important, but very little is ever said about it. It really should be addressed more often!
More could be done.
More needs to be done than what was taught in 1st and 2nd grade
My answers to the questions don't reflect this, but I believe that these issues are very important. I wish that I did know more about fire/burn prevention and safety.
Necessary to know but not something that is taught everywhere. If I wasn't an Eagle Scout, my knowledge of it would be very limited.
need more

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NEED MORE EDUCATION

Needs to be addressed more frequently
 needs to be better taught to all age groups
 needs to be made more available
 needs to be more implemented
 none knows a thing about it
 Not enough information/programs available.
 not enough training in communities or schools
 not known well enough
 not taught enough
 Obviously it isn't taught very much because I don't know anything about it. However, it is something that could be used to save lives so we should all know about it.
 On my campus it is in a bad state. The fact that a legitimate fire did not set off any alarms makes me nervous. Someone could have been seriously hurt.
 people take it too lightly, myself included.
 Should be taught more often.
 the plans need to be updated, but it's a good idea
 There isn't enough real information on it. And no one takes fire safety seriously when it comes to permitted items in college dorms.
 there should be more education regarding it
 training should be more practically based
 Very important but as a college student i don't remember the last time i received it except at the hospital i work at for a brief fire safety quiz
 very important, but people think it's not
 we don't know enough
 We learn it when we are little, but it is not enforced nearly enough as it should be when we are in college and becoming young adults. Even as a child, I know many parents who did not go over any fire safety with their kids, so both young children and young adults should be well educated about fire safety.
 We need a class on campus.
 we need more of it
 We will always need more
 we're not educated enough in this area
 Wish I knew what to do and had some sort of program
 would like to know about it.

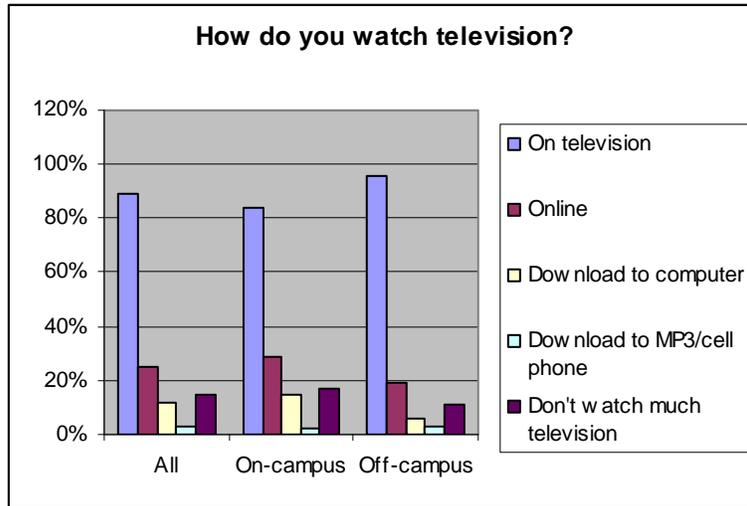
Q34. Do you or your roommate have a television?

| | | | |
|-----|-----|-----|-----|
| Yes | 92% | 87% | 98% |
| No | 9% | 13% | 3% |

| Q35. How do you watch television shows? | | | |
|---|-----|-----------|------------|
| | All | On-campus | Off-campus |
| On television | 89% | 84% | 96% |
| Online | 25% | 29% | 19% |
| Download to computer | 12% | 15% | 6% |
| Download to MP3/cell | 3% | 2% | 3% |

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| | | | |
|-----------------------------|-----|-----|-----|
| phone | | | |
| Don't watch much television | 15% | 17% | 11% |



Q36. What shows do you typically watch?

The top 10 shows listed by the respondents include drama (6), reality (1 show), news (no show specified) and entertainment (1 show).

| Show | #1 | |
|---------------------------|----|---------------|
| Gray's Anatomy | 52 | Drama |
| CSI | 26 | Drama |
| House | 16 | Drama |
| Lost | 17 | Reality |
| News | 13 | News |
| American Idol | 11 | Entertainment |
| Heroes | 14 | Drama |
| Law and Order | 14 | Drama |
| | 24 | Drama |
| Family Guy | 11 | Comedy |
| Gilmore Girls | 9 | Comedy |
| Friends | 15 | Comedy |
| Discovery Channel | 10 | Educational |
| MTV | 6 | Entertainment |
| The Office | 14 | Comedy |
| South Park | 8 | Comedy |
| Scrubs | 4 | Comedy |
| Sports | | Sports |
| Everybody Loves Raymond | 4 | Comedy |
| American's Next Top Model | 6 | Entertainment |
| Mythbusters | 5 | Entertainment |

Q37. Do you own an MP3/iPod that is video-capable?

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| | All | On-campus | Off-campus |
|-----|-----|-----------|------------|
| Yes | 17% | 18% | 15% |
| No | 83% | 82% | 85% |

Q38. Do you own a cell phone that is video-capable?

| | All | On-campus | Off-campus |
|-----|-----|-----------|------------|
| Yes | 39% | 35% | 46% |
| No | 61% | 65% | 54% |

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| Q39. Rank, in order, the relative effectiveness of these methods for communicating fire/burn safety information to students (10 most effective, 1 least effective) | | | | | | | | | | | |
|--|-----------|-----|----|----|----|----|----|----|-----|-----------|----------------|
| answer options | 1 (least) | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 (most) | Response Count |
| Online/Internet based information | 26 | 13 | 31 | 28 | 47 | 42 | 54 | 76 | 55 | 73 | 445 |
| Video downloads to MP3/iPod | 80 | 108 | 54 | 33 | 36 | 27 | 27 | 22 | 21 | 9 | 417 |
| Video downloads to cell phone | 97 | 107 | 59 | 41 | 35 | 37 | 23 | 25 | 10 | 6 | 440 |
| Instructor-led group training sessions | 14 | 2 | 24 | 34 | 21 | 35 | 50 | 61 | 108 | 98 | 447 |
| Advertisements in newspapers | 61 | 52 | 75 | 84 | 60 | 44 | 33 | 19 | 9 | 1 | 438 |
| Advertisement on buses | 79 | 77 | 72 | 67 | 56 | 42 | 35 | 18 | 4 | 0 | 450 |
| Advertisement around campus | 4 | 21 | 42 | 60 | 83 | 80 | 71 | 44 | 30 | 11 | 446 |
| Flyers | 33 | 28 | 50 | 70 | 69 | 73 | 69 | 50 | 14 | 4 | 460 |
| Student-to-student | 20 | 23 | 36 | 24 | 38 | 58 | 66 | 91 | 83 | 33 | 472 |
| Demonstrations such as fire extinguisher training, burning mockups of student rooms, etc. | 9 | 9 | 6 | 12 | 16 | 18 | 31 | 47 | 110 | 228 | 486 |

APPENDIX B SECOND LIFE TRANSCRIPT

An online focus group was held at Second Life by the Peoples Burn Foundation. This is the first time that a virtual focus group specializing on fire safety was held, and participants were involved from both the United States and the United Kingdom.

According to Wikipedia:

***Second Life** (abbreviated as **SL**) is an Internet-based virtual world which came to international attention via mainstream news media in late 2006 and early 2007. Developed by Linden Research, Inc (commonly referred to as Linden Lab), a downloadable client program enables its users, called "Residents", to interact with each other through motional avatars, providing an advanced level of a social network service combined with general aspects of a metaverse. Residents can explore, meet other Residents, socialize, participate in individual and group activities, create and trade items (virtual property) and services from one another.⁵*

The following is the transcript of the Second Life focus group held on WHEN. It was hosted by Sarah Robbins (Intellagirl Tully) from MediaSauce. Ed Comeau, publisher of Campus Firewatch was Rholling Rhode.

Intellagirl Tully: we're here today for the People's Burn Foundation

Intellagirl Tully: a non-profit group dedicated to raising fire injury awareness

Intellagirl Tully: since a lot of you are educator your input is really important

Intellagirl Tully: we're concerned that many students aren't fire-safety aware

Intellagirl Tully: Do you have a sense of how safe your campuses are?

Intellagirl Tully: are you asked to go over fire safety with your students?

Intellagirl Tully: for example, do they even know how to exit your classrooms safely?

Milosun Czervik: <http://www.studentprograms.vt.edu/firesafety/>

Intellagirl Tully: yeah Milo...most campuses have a program but are the students really aware of it?

Wainbrave Bernal: Well, following the tragedies at Virginia Tech - nodding to Milo - we have talked about safety strategies in general more

Milosun Czervik: I think that the Resident Advisors are in charge of going over it with dorm residents

Milosun Czervik: I am sure they would be, actually

Milosun Czervik: and yes..'

⁵ Wikipedia, Second Life http://en.wikipedia.org/wiki/Second_Life

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Milosun Czervik: what happened here last month has caused a good deal of conversations about campus safety in general

Intellagirl Tully: So the dorm advisors are in charge of that information?

JustinCLuker Crosby: I'm going to one of our Partner colleges and I have to attend a 15minute fire safety presentation before I can teach on their site

Milosun Czervik: but the issue is that A LOT of students get tired of the false alarms...

Milosun Czervik: where some idiot pulls the alarm after coming in drunk at 2 am on a Thursday night...

Milosun Czervik: then everyone is standing outside freezing their arses off for an hour

Milosun Czervik: so... a few of those... and people just sleep in.

Intellagirl Tully: Are you all aware that as of right now, May, we've surpassed the record of student deaths due to fire on college campuses?

Wainbrave Bernal: yes - much like the person who dozes off while driving... the attention goes lax when danger isn't immediate

Intellagirl Tully: Good point Milo...do they not take it seriously?

Milosun Czervik: why should they?

Milosun Czervik: if, after 10 alarms, NONE is real...

Intellagirl Tully: is there a solution?

Milosun Czervik: then #11, even if real, slows reactions considerably

Milosun Czervik: sure... cameras in the hall...

Milosun Czervik: to catch the perps of false alarms...

Milosun Czervik: and to prosecute them

Wainbrave Bernal: raise the stakes + simulations (!)

Intellagirl Tully: Do you think that showing them the consequences of a fire would make them more aware, more likely to assume every alarm is real?

Milosun Czervik: I can only speak from personal experience.... my dad showed me pictures of fire victims when I was 6 or 7...

Milosun Czervik: he was a volunteer firefighter... and very concerned for our safety in an older house...

Milosun Czervik: so I was VERY careful not to do silly things with matches or accelerants then...

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Intellagirl Tully: this video shows the story of two students burned at Seton Hall in the dorm fire....do those stories "wake students up"?

Milosun Czervik: that'd be a good research question

Wainbrave Bernal: that's a great example, Milo! we need a spiraling curriculum!

Rholling Rhode: FYI...there were 19 false alarms in the weeks leading up to the fatal fire at Seton Hall

Milosun Czervik: well, I'm not sure one would get IRB clearance to show young kids photos of burn victims.

Milosun Czervik: actually, the situation at VT is relevant...

Intellagirl Tully: well they don't have to be graphic

Milosun Czervik: before the shooting on April 16th...

Intellagirl Tully: i agree goldie

Wainbrave Bernal: start with some experiences young and scaffold through to the older years

Milosun Czervik: we had 2 false bomb threats...

Milosun Czervik: so all the commotion was kind of "ho hum" at first

Milosun Czervik: I think fire photos would have to be somewhat graphic to be effective.

Intellagirl Tully: VT is certainly a sobering example...do you think students will stay vigilant? or will it pass if nothing else happens?

You: Yes, I used to be in the ROYAL Navy, and we were exposed to burn victims and had fire extinguishing duty.. might be over the top, but was very impressionable.

Wainbrave Bernal: the human brain is not only a pattern-maker, but a filter too

Milosun Czervik: it will pass... who can possibly imagine such horror happening again? But the problem is that it can - not just the shootings - but the fires...

Intellagirl Tully: what do you mean Wainbrave?

Milosun Czervik: people think that such a thing necessarily makes "those in charge" more careful or whatever

Intellagirl Tully: good point Milo...someone else is watching out for me, right?

Milosun Czervik: yep... false sense of security, for sure.

Wainbrave Bernal: If I come into a house and it stinks like cooked cabbage - I will filter it out eventually

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Intellagirl Tully: so they filter out the fear?

Wainbrave Bernal: If I hear 10 fire alarms and they are all false, I will begin to filter it out as not important

Milosun Czervik: Goldie - it will take a while for us to figure out what lessons were learned. That nutcases - or fires - can kill is not a lesson really.

Intellagirl Tully: beyond that though, we're not sure that students even know how to respond if they think it's a real fire

Wainbrave Bernal: Getting out of a burning building with little injury would make a great video game

Milosun Czervik: those exist

Intellagirl Tully: how aware are all of you regarding how to get out of the building where you teach if there is a fire? are you briefed on that?

Milosun Czervik: as do "burn houses"

Milosun Czervik: that is a good question, IT

You: Wainbrave YES... we did that for real as part of fire duty... fire control.. very real.

Milosun Czervik: not sure me or my students really "know" how to get out of a fire... it'd be a good thing to cover.

Wainbrave Bernal: would it work as a tool if we made those available to the general public?

Wainbrave Bernal: especially if modeled after buildings that we use everyday!

Intellagirl Tully: we know that most fires happen in the residences, off campus, where the students are responsible for their own escape

You: I wonder if a week of fire induction (along wit other H&S) would be a good concept... credit weighted too

Milosun Czervik: I think if things were designed in SL, they would have to be matched with some RL programs...

Wainbrave Bernal: absolutely

Milosun Czervik: practice escape with your avatar in a SL building ...

Milosun Czervik: then figure out if that works in the RL situation... especially with smoke (fog) present

Wainbrave Bernal: make it timed

Intellagirl Tully: for those of you who are parents...would you feel confident that your college age student would know how to escape a fire on campus?

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Intellagirl Tully: why not?

You: I always think back to my military days, we HAD to do fire control... why don't students of the same age? - in sometimes more dangerous environments.

Wainbrave Bernal: The question is also: what are my kids PEERS going to do - even if I teach my kids well?

Intellagirl Tully: what do you mean wain?

Intellagirl Tully: good point vidorah

Milosun Czervik: but how many of us, on checking into a hotel, go over the fire escape plans???

Milosun Czervik: same deal, really...

[13:32] Wainbrave Bernal: people that are not trained might panic and put other people in jeopardy (i.e. my kids)

Intellagirl Tully: but we know that so many students die in house fire off campus

Intellagirl Tully: good point

You: Yes but if we all had fire safety and fire control orientations, and students, it would be second nature.

Rholling Rhode: Vidorah...why didn't occur to you to talk to your child?

[13:33] Wainbrave Bernal: exactly - so leaving it to parents to individually teach it to your kids might be insufficient

Intellagirl Tully: well and if we talk to our children...why not our grown children, our students?

You: wainbrave yes.... it should be part of an institution

Wainbrave Bernal: though laudable, of course!

Josepi Noel: chances of escaping would be better of course, if the students had some knowledge

You: part of the induction....

You: take them off to a fire control camp

Milosun Czervik: I think it'd be useful to talk about the circumstances of the fires...

You: play with real fires

Milosun Czervik: most think that if they see an alarm and see some sprinkler heads - then all will be fine

Wainbrave Bernal: talk to real burn victims (survivors)

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Intellagirl Tully: these are fires in off campus housing

Intellagirl Tully: good point Milo...but they don't check the batteries

Milosun Czervik: right...

Milosun Czervik: but I bet the battery on the iPod or phone is fully charged

Rholling Rhode: In most fatal fires, there was a smoke alarm present when they rented, but....

Intellagirl Tully: they don't know how to maintain them?

Rholling Rhode: They deliberately took down the smoke alarm, removed the battery or covered it up

Intellagirl Tully: why does that happen Rholling?

Wainbrave Bernal: because of their cooking habits?

Rholling Rhode: False alarm activations, mainly during parties or cooking

Intellagirl Tully: so if we assume they're learning it on campus, campus assumes people are learning from parents...who is teaching?

Rholling Rhode: How can we drill home the fatal consequences of what they interpret as a harmless act?

Wainbrave Bernal: I am a survivor of a head-on car crash with a drunk driver

Josepi Noel: Exactly

Wainbrave Bernal: I will share my x.p. with those who might listen

Intellagirl Tully: do they have to be that scared, wain?

Wainbrave Bernal: stories make people imagine and think

Rholling Rhode: Students are far more aware of their personal safety, as they move around campus

Rholling Rhode: Than they are of fire and burn safety.

Rholling Rhode: Why do you think that?

Intellagirl Tully: the students who have viewed this video, with stories of real burn injuries, keep responding that they'd rather learn through humor

Wainbrave Bernal: if they can't foresee the possibilities, they won't improve their Future Time Perspective

Milosun Czervik: there is a time when humor is decidedly non-productive

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Wainbrave Bernal: humor is effective to teach about death, true

Milosun Czervik: not everything has to have a Daily Show production...

Wainbrave Bernal: humor gives us a little emotional insulation to horror

Milosun Czervik: no one likes to be scared... few like to think of their own mortality...

Wainbrave Bernal: think of the many horror movies with comedy thrown in

Intellagirl Tully: so how do we prevent them from looking away or ignoring the information when it isn't "fun"?

You: I really do believe one solution is to run fire control courses... off with the fire dept for a week.

You: Give them a sense of responsibility

Intellagirl Tully: would people do it though, audio?

You: they would if weighted

You: credit weighted

Wainbrave Bernal: layer the effects: interlace humor in to give breathing room to the heavy weight

Milosun Czervik: part of what needs to happen, though...

You: include other health & Safety

Milosun Czervik: is not just college officials saying "Pay attention or else!"

Milosun Czervik: instead, there needs to be an atmosphere of caring for the lives and well-being of students.

You: let them fight a real fire

You: let them work in teams on putting out a fire....

You: creating a water wall

Milosun Czervik: you can tell kids not to drink over and over... yet still many die of alcohol poisoning....

You: all basic military stuff really..

Intellagirl Tully: good point Milo...fear with a sense of caring?

Milosun Czervik: but how do they respond to situations where they feel like someone actually cares for them...

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Wainbrave Bernal: I have a bunch of friends that are smokejumpers and firefighters -

Milosun Czervik: where they are not numbers of faces in a dorm... but a real person with something to contribute

Wainbrave Bernal: they say that learning the "ecology of fire" is important

Milosun Czervik: (or faces in off-campus housing..)

Intellagirl Tully: but how do we do that, Milo? small group training? we want them to know we care but they tune out

Milosun Czervik: it depends on the campus, really.

Milosun Czervik: it'd be hard here, truth be told...

Wainbrave Bernal: differentiated instruction

Milosun Czervik: but there are many different ways to reach students

Wainbrave Bernal: each learner has different needs

Wainbrave Bernal: use a Universal Design for Learning approach

Milosun Czervik: do any colleges/unis represented here do fire safety during Freshman Orientation?

Intellagirl Tully: if we had mandatory fire safety info in freshman orientation? would that work?

You: In UK with some vocational qualifications it is impossibly NOT to include some aspect of Health & Safety, in the courses.

Milosun Czervik: we do run small groups for that over the course of 8 weeks or so in the summer... the incoming class of 6,000 or so kids....

Milosun Czervik: maybe 4K...

Intellagirl Tully: good point about whole education audio

Intellagirl Tully: so Milo, fire safety is part of that?

You: Yes, as part of the induction, credit weighted

Milosun Czervik: I am going to ask, IT... I really don't know.

Milosun Czervik: and leadership plays a critical role...

Milosun Czervik: college administration needs to set aside "fire safety" weeks... just as elementary school principals do!

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Intellagirl Tully: and i think that's what's most important....these students are our kids, we're responsible for them and we don't know whether they know. we should

You: Apart from anything else a fire fighting course is damn good team building =skills.....

You: you fight fire in teams

Milosun Czervik: wasn't there a sim here in SL - maybe last spring - that simulated fires on an oil rig for training purposes?

Milosun Czervik: I never did find it...

You: I'm not suggestions students become fire fighters... but in fighting fire in teams, they become very aware.....

Intellagirl Tully: we know that there are two ages of people we educate about fire..kids under 7 and adults over 65

Intellagirl Tully: there's a huge gap in the middle

Josepi Noel: I agree

Milosun Czervik: people have said that about my ears

Wainbrave Bernal: <http://www.birchgrovepublishing.com/id21.html>

Intellagirl Tully: what's the first safety tip that comes to your mind when someone mentions "fire safety"

Milosun Czervik: stop drop and roll

Wainbrave Bernal: stop. drop. roll

Wainbrave Bernal: ha!

Milosun Czervik: not very helpful though - is it?

You: We also had to do ships damage control.. you know ship hit with torpedo... now stop it sinking.... much the same team building and awareness... I've never understood why all the military do this but not thousands of students in an institution.

Intellagirl Tully: That' our point...stop drop and roll is to put out fire...where is the prevention education?

Intellagirl Tully: besides Smokey the bear...have any of you ever been taught fire injury prevention? not just mitigation?

Wainbrave Bernal: sure

You: yes

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Intellagirl Tully: Hey Josepi! What do you remember about fire prevention?

Intellagirl Tully: Jane...i know you have kids..what have you taught them?

Intellagirl Tully: BG...what do your kids know about fire prevention?

Josepi Noel: honestly besides the things i have learned from People's Burn Community Awareness...all I have learned from school is stop drop and roll

Josepi Noel: kinda sad

Intellagirl Tully: Typewriter...what have you taught your kids about escaping your apartment in a fire?

Josepi Noel: Very very important to know escape routes, preplanning, etc.

You: As a matter of interest, do you guys in USA have fire safety TV slots? (we do in UK)

Josepi Noel: do we?

Intellagirl Tully: we really don't audio

Intellagirl Tully: Smokey the bear is long gone

Wainbrave Bernal: nope

Armikus Runo: just the "only you can prevent wildfires" spots

You: We have segments like, "do not open the door is smoke is being emitted"...

You: or "if the hot oil catches fire, use a wet towel"

You: we have a lot of these.

Armikus Runo: I've seen some Smokey the bear commercials recently - how many things can you make with a box of matches, how many can you destroy with just one

Intellagirl Tully: you're all techy...do you know how to be sure you're not causing fire danger with your powerstrips?

You: that's interesting them isn't it... that there are not many in USA>... we have a lot here.

You: and often on late at night, prime student TV time.

You: Milsoun, it's not a competition mate.. just find it interesting we have a ton of public service ads... for safety

You: why don't YOU GUYS

Intellagirl Tully: tell me one thing you'll take away from today's discussion...one thing that you'll ask about, think about, do something about

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Wainbrave Bernal: practice escaping the house with my two young kids

Milosun Czervik: I am going to ask questions to university officials, for sure... just to get my own curiosity satisfied.

Josepi Noel: college dorms, and schools are different than elementary schools....they need the knowledge and how to escape from such buildings

Milosun Czervik: you know what would be cool...

Milosun Czervik: someone to fun a competition on Youtube for the frat or sorority that makes the best "fire prevention & escape" video

Milosun Czervik: make it viral...

Milosun Czervik: that'll get folks chatting

You: there you go

Intellagirl Tully: great point Milo

Wainbrave Bernal: oh yeah

Josepi Noel: but it may be more entertaining than anything else

Josepi Noel: entertaining

Milosun Czervik: it might be...

Intellagirl Tully: i sooo appreciate you all coming today

Milosun Czervik: but the point is to provoke thought, for sure... as VM said

Wainbrave Bernal: thank you, Intellagirl

Intellagirl Tully: i can't tell you how much great info we've got here, thank you very much