

ASSE Helps Provide Fire Prevention Training for Students

Each year, college students are injured and killed in preventable campus-related fires. To prevent injuries and fatalities caused by fires that occur in college residence halls, off-campus housing and fraternity/sorority houses and to raise awareness about life-saving fire prevention knowledge as students head back to school, ASSE, West Virginia University (WVU), RA Fire Academy and the Morgantown Fire

Department are providing key fire prevention information and demonstrations.

According to NFPA, from 2000 to the present, 146 students have died in a combination of off-campus, residence hall and fraternity/sorority fires. The majority of campus-related fatal fires occur in off-campus housing. According to the U.S. Fire Administration, of the 146 campus-related fire fatalities that occurred from January 2000 to the present, 85% happened off campus. Today, more than two-thirds of the U.S. student population lives in off-campus housing.

Recently, two Liberty University students in Lynchburg, VA, died in a fire that occurred in a one-story, wood-framed building with no automatic sprinkler system or working smoke alarm; a student at Cornell University in Ithaca, NY, died in an off-campus house fire; and two Frostburg State University (MD) students died in an off-campus apartment fire as did a sophomore at the University of St. Thomas in St. Paul, MN.

ASSE CAMPUS-RELATED FIRE PREVENTION TIPS

Each year, ASSE's Fire Protection Practice Specialty (FPPS) has worked with ASSE's public relations department to provide free fire prevention and safety information and tip sheets. These may be downloaded [here](#) and include the following topics:

- Campus-Related Fires: Statistics and Causes.
- How to Prevent Campus-Related Fires.
- Fire Escape Planning: What to Do in Case of a Fire.
- Fire Safety Equipment for Off-Campus and Greek Housing.
- Recent Campus-Related Fire Tragedies.
- Parents' Guide to Fire Safety: What You Need to Know When Your Child Leaves Home for College.
- Campus-Related Fires: Key Safety Resources.

WEST VIRGINIA UNIVERSITY

WVU's main campus is located in Morgantown, WV. The campus is spread throughout the city with classroom and laboratory buildings, dormitories and support buildings interspersed amid business and residential areas. WVU's mix of historic and modern facilities includes 189 buildings on 1,099 acres. A student recreation center, life sciences building, library and two residence halls have been added in recent years. Major renovations have also been made to several buildings. Ten main campus buildings are located on the National



Photo 1: Morgantown Engine 1 at the training session. The Morgantown Northside Fire Station is in the background. This is the newest station, filled with modern training rooms, living quarters and exercise equipment.



Photo 2: John Principe, Director, WVU EH&S with Chief Mark Caravaso.

Photo 3: (Left) RAs exit the smoke-filled hallways.



Photo 4: (Right) A propane-fueled fire simulator permits RAs to learn proper fire extinguisher use under controlled conditions.



Photo 5: (Left) Contestants used handheld remotes to select the best answers to fire safety questions.



Photo 6: (Right) Max Humphreys tells RAs about the Station Nightclub Fire of Feb. 20, 2003.



Register of Historic Places, and WVU operates eight experimental farms, four forests and several regional campus locations throughout the state.

WVU is a major research institution and West Virginia's flagship university. WVU is the state's only research doctoral-granting, land-grant university. WVU offers nearly 200 degree programs at the undergraduate, graduate, doctorate and professional levels. One of WVU's regional campus locations at Jackson's Mill, home to West Virginia 4-H camping, is a rustic-style conference and gala facility in a historic heritage-based setting a few miles outside of Weston, WV. Jackson's Mill is also home to the West Virginia Fire Academy, a training facility for volunteer and professional firefighters from around the state and nation.

WVU CAMPUS FIRE SAFETY INITIATIVE

WVU's Department of Environmental Health and Safety (EH&S) recognized the importance of having a strong, vibrant fire safety program. The RA Fire Academy evolved out of several training sessions the department offered for the students, campus community and local high schools in the area. By working collaboratively with various university departments, administrators, student staff and the Morgantown Fire Department, the RA Fire Academy was created. Some form of this fire safety training has been offered since 2003 to students in the campus community. WVU

EH&S envisions offering this fire academy training to all first-year students.

MORGANTOWN FIRE DEPARTMENT FIRE SAFE 101

The Morgantown Fire Department has three stations and a staff of 47 full-time firefighters. The Morgantown Fire Department has 12 specially equipped vehicles, a HazMat trailer, a Gator for the Rail Trail emergencies and a Boston Whaler Fire Rescue boat. The Morgantown Fire Department has a long and close relationship with WVU. Its Fire Safe 101 program works to address campus fire safety.

Chief Mark Caravazos spoke with the authors about their involvement with WVU, the RA Fire Academy and their efforts to protect students from fire. He emphasized that students must be diligent in staying aware of their surroundings, know where exits are located and always have a plan to exit from buildings. Cooking is a major cause of fires at student-occupied apartments.

Chief Caravazos stressed that it is critical for students to not be apathetic toward fire alarms. When a fire alarm is sounded, students need to respond quickly, leaving the building without delay. The typical dormitory room may become enveloped by fire in less than 2 minutes. While campus-owned dormitory rooms are protected with building fire sprinklers, many off-campus housing units are not protected with sprinklers. The

fire department stresses the importance of operational smoke detectors and how important it is to not tamper with sprinkler systems.

Chief Caravasos praised the RA Fire Academy for its success in making resident assistants (RAs) aware of the hazards of campus fires and for the training the program provides.

The Morgantown Fire Department and WVU EH&S Department meet regularly to review fire safety concerns and to discuss emergency preparedness. The two units often share training exercises to ensure that all personnel are properly prepared to handle campus emergencies.

RA FIRE ACADEMY

All student RAs are required to participate in the RA Fire Academy in a variety of hands-on training scenarios. The RAs then share the information they learn with the students on their respective floors.

Activities include:

- smoke-filled hallway;
- hands-on fire extinguisher training;
- quizdom training;
- movie/lecture;
- competition games [Skeet Shoot Frisbee (shoot Frisbee from the air) and Medicine Ball Push (push ball with fire hose to a designated distance)];
- live burn (A mock dormitory room is constructed with the appropriate early warning fire protection. The room is then set ablaze. Students observe how quickly a room is engulfed with smoke and flames; and, they

learn the importance of smoke detectors, evacuation and sprinkler systems. Additionally, the importance of using open flames with caution is discussed.)

Each RA rotates through each training station. The training culminates in the sixth station where a dorm room mockup is lit, and students are able to see just how quickly a dorm room fire can spread. The overall goal is to provide each RA a rounded training session.

SMOKE-FILLED HALLWAY

Students maneuver through a smoke-filled hallway simulating an actual fire event. This activity teaches students how to get out of a burning building in a safe and timely manner. The third floor of Fieldcrest Hall, a residential student housing facility, was filled with theatrical smoke. The purpose of this station was to provide participants an opportunity to navigate through a simulated fire scenario but in a safe and controlled setting. RAs were instructed on smoke characteristics and proper procedures to exit a smoke-filled area. They were led into a hallway with zero visibility and followed the hallway to exit at the other end of the building. Exercise monitors used infrared thermal imaging cameras to follow students to make sure everyone went through safely. While this exercise uses safe theatrical smoke in a controlled setting, students are reminded that in a real fire situation, the smoke and heat produced would quickly become highly toxic and overbearing. Students are encouraged to familiarize themselves with their residence and to learn multiple ways out of the building.



Photo 7: (Left) RAs learn to control fire hoses by moving a ball across the parking lot.

Photo 8: (Right) Hitting a flying Frisbee with a fire hose is tougher than it looks.



Photo 9: (Left) RAs view the dorm room fire from the comfort and safety of bleachers.

Photo 10: (Right) At 30 seconds into the fire, the smoke detector sounds, and the fire gains headway.

Photo 11: (Left)
At 1 minute, the flames impinge upon the ceiling of the room. In the room mockup, the smoke is able to escape into the atmosphere; however, in a dorm room with the windows and door closed, the room would be untenable for occupants.



Photo 12: (Right)
At 1 minute 40 seconds, the fire has already flashed over, and any occupants in the room would not be expected to survive.



Photo 13: For training purposes, the fire sprinkler in the room was opened manually. Chief Caravaso explains to the RAs how effectively and quickly fire sprinklers control a room fire. After only a few seconds of sprinkler operation, the fire is knocked down.



Photo 14: Members of WVU's EH&S Department along with members of the Morgantown Fire Department in front of one of the "dorm rooms."

HANDS-ON FIRE EXTINGUISHER TRAINING

Students handle fire extinguishers on a live fire. During the fire extinguisher station, students are taught

how to use a fire extinguisher and have the opportunity to put out a fire. Students are taught the P.A.S.S. mnemonic as a way to remember the proper steps of using a fire extinguisher. Pull the pin, aim at the base of the fire, squeeze the handle and sweep back and forth.

QUIZDOM TRAINING

Quizdom Training was created as an interactive, fun way to test RAs' knowledge of fire safety. Each student picks up a handheld remote and answers questions by hitting the appropriate answer button. The fastest students were identified graphically on the screen, and the winner was awarded a scented flameless candle.

MOVIE/LECTURE

Max Humphreys, program administrative senior and fire code specialist, discussed how quickly a fire can start in assembly occupancies and how people react during a fire. During this station, actual video footage of the Feb. 20, 2003 fire at The Station Nightclub in West Warwick, RI was shown to the students. The fire claimed 100 lives and is the fourth deadliest nightclub fire in U.S. history. Students were gripped by the images and the realization that such a fire can happen. After the session, Humphreys stated, "The two most important items to come out of this session were the fact that all of the RAs were moved by the nature of the video and specifically the reaction of a young lady in one of the groups who had experienced fire when she was 9 years old. The student's reaction to seeing a fellow classmate become so emotional while watching the nightclub fire made more of an impact than anything I contributed during this session."

COMPETITION GAMES

Just like the fire department extinguishing a structure fire, fire prevention is a team effort. In the games station, students learn to use fire hoses by playing games that require teamwork. Some dormitories and learning centers are equipped with hose stations, and

if they are needed, the RAs must know how they work and what to expect.

This year, two exercises were used. One was the Medicine Ball Push, where the object is to push a ball across the parking lot with the hose stream; and Skeet Shoot Frisbee, where students attempt to hit a flying frisbee with the water stream from a fire hose, which is harder than it might sound. Each year, different games are used so that returning RAs have a chance to experience something new. Other games used include timed hose roll evolutions, bucket brigade, which consists of two teams racing against each other to fill buckets with water before an opponent overflows their bucket, and Bunker Gear. The Bunker Gear game is a favorite and demonstrates that living space should always be equipped with smoke alarms, fire extinguishers and a fire escape plan (Be Equipped with Fire Safety). The game is a race to put on bunker gear. Once participants have the gear on, they are asked to balance themselves on one foot (Balancing Fire Safety). Then the participants are challenged to see how many push-ups they can do (Strengthen Your Fire Safety Knowledge). These games help students get engaged in the learning process in a fun, cooperative way.

LIVE BURN

During this session, students get to witness a live burn of a mock dorm room. The room furnishings used in the mock dorm structure are no different than what is found in a typical residential student room or campus apartment. The mock room is equipped with a smoke detector and sprinkler. The live burn is narrated by Morgantown Fire Chief Caravasos, who explains the evolution of the burn in 30-second increments. The narration provides the students with an overview of how fast a fire can spread throughout a structure. This is a controlled fire that is allowed to reach flashover status before the sprinkler is activated. Students are advised in a real fire situation that the sprinkler would have activated much more quickly. Once the sprinkler is activated in the room, it will keep the fire in check until the firefighter completes the extinguishment. A firefighter conducts an overhaul of the structure and contents, then allows students to take a closer look at the damage after the structure cools.

This session's goal is to stress the importance of how fast a fire can spread and to demonstrate how quickly toxic smoke and deadly heat levels can overtake a structure. Students are reminded that fire alarms save lives, while sprinklers save property. Therefore, students are encouraged to treat all fire alarms as if it is an actual incident and are reminded to leave the building as soon as an alarm sounds. Students are often surprised at just how fast the fire spreads and at the amount of heat and smoke the fire can produce.

CONCLUSION

The RA Fire Academy is intended to provide stu-

dent leaders with the necessary knowledge and skills to better enable them to assist others in the event of an actual fire emergency on campus. The goal is to give them some real life hands-on experience in a safe and controlled setting so if they are ever faced with a real fire emergency, they will have the confidence to make the right decisions in a quick, calm way and hopefully save lives. ☺

LINKS

- [WVU Students Involved in Fire Prevention/Safety Training](#)
- [Fire Chief Mark Caravasos](#)
- [WDTV News Story](#)
- [ASSE Press Release](#)

John A. Principe, III, CSP, CHCM, CSHM, is the director of environmental health and safety at West Virginia University (WVU). Prior to WVU, Principe worked at Denison University as the director of environmental health and safety for 9 years and at Wheeling Pittsburgh Steel for 11 years as a fire/safety inspector, trainer and safety supervisor. His certifications include Certified Mold Inspector and Remediator, IICRC Water Damage Restoration Technician, Certified Aquatic Facility Operator, Firefighter II, EMT-Paramedic, HazMat Response Technician, Certified Fire Safety Inspector and BLS Instructor. He is a member of ASSE, the National Safety Council, the National Fire Protection Association and the Campus Safety Health and Environmental Management Association. Principe was the 2008-09 recipient of ASSE's Region VII Safety Professional of the Year award and served as past president and member of ASSE's Central Ohio Chapter's executive committee. He also served 3 years as president of the Licking County Safety Council. Principe joined the volunteer fire service in 1992, and has been a member of several community fire departments working as a firefighter, paramedic, fire inspector and HazMat technician.

Walter S. Beattie, CSP, CFPS, CSHM, joined the volunteer fire service in 1969, and remains involved in fire protection. He has worked in the highly protected risk insurance field since 1979 in various capacities, including senior loss control specialist, HPR technical manager, underwriting special agent and account engineer. He is senior consulting engineer, insurance service, with AXA MATRIX Risk Consultants in Miamisburg, OH. Beattie is a 2011 recipient of ASSE's Charles V. Culbertson Outstanding Volunteer Service Award and was named 2007-08 Fire Protection Branch (now Practice Specialty) Safety Professional of the Year and is currently the FPPS administrator. Beattie is a member of NFPA 655 (Standard for Prevention of Sulfur Fires and Explosions), NFPA 654 (Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing and Handling of Combustible Particulate Solids) and NFPA 91 (Standard for Exhaust Systems for Air Conveying of Vapors, Gases, Mists and Noncombustible Particulate Solids) standards committees.

Quizdom Training was created as an interactive, fun way to test RAs' knowledge of fire safety. Each student picks up a handheld remote and answers questions by hitting the appropriate answer button.