

# FITTER FOR DUTY

## CREATING BETTER (AND LIFESAVING) WORKOUTS FOR FIREFIGHTERS AND COPS

By Aileen Yoo

**The number one killer of firefighters nationwide isn't burns or smoke inhalation.**

ACCORDING TO THE U.S. FIRE ADMINISTRATION, the leading cause of fatalities from 2004 to 2013 is stress/overexertion. "It's not uncommon for firefighters working at a scene or just after an incident to die of a heart attack or other stress or overexertion related illness," says Arcata Fire District Battalion Chief Sean Campbell.

To help better manage the physical and emotional demands of their jobs, Campbell, other AFD firefighters, Humboldt Bay Fire Department, and Humboldt State University Police Department officers are taking part in a pioneering HSU training and fitness program for local firefighters and police officers.

Developed by Kinesiology Professor Young Sub Kwon, the new program creates personalized training regimens, which are expected to improve fitness and, in turn, increase endurance of stress.

"Many firefighters and police officers are not healthy because their jobs put them under stress," says Kwon, recipient of the University's McCrone Promising Faculty Scholars Award in 2015. "For example, police officers are often driving. If they need to pursue a suspect on foot, there's no warming up. They have to run as fast as they can. Through a fitness program, I can help improve their capacity to run without warming up."

Kinesiology Professor Young Sub Kwon makes his way up a culvert pipe during Arcata Fire District's confidence course. This exercise is one of many demanding obstacles designed to simulate firefighting scenarios.

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## 'YOU CAN LET YOURSELF GO'

Kwon's research highlights another issue: Once recruits become a firefighter or police officer, they are not required to meet fitness benchmarks.

California police officers are not subject to physical requirements, says University Police Department's Sgt. John Packer, who along with other UPD officers is participating in Kwon's program.

It's generally the same story nationwide for career police officers and firefighters.

"It's up to individual departments to implement physical requirements, and those departments are few and far between," says Lt. Chris Mulligan of the Broward County Sheriff's Office in Florida. A former colleague of UPD Chief Donn Peterson, he works in the Training Division and is trying to launch a mandatory physical abilities test for detention and sworn law enforcement.

Cases in point: For the first time since 1999, FBI agents will have to pass a fitness test, according to the *New York Times*. Similarly, the U.S. Forest Service has an annual fitness standard. There are also recommended standards and guidelines issued by the National Fire Protection Association, which some agencies follow, and International Association of Chiefs of Police.

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Kinesiology Professor Young Sub Kwon helps University Police Department's John Packer (top) and Arcata Fire District's Sean Campbell (right) manage the stress of their jobs. For a firefighter, that means being physically and mentally ready to climb across wires, use heavy and unwieldy equipment, and run into burning buildings (opposite page), as shown in these training exercises.



Campbell puts it simply: “You can come in as a new firefighter and be completely fit day one and then you can let yourself go after that.”

“If we’re going to serve our community effectively we need to maintain a fitness level that’s acceptable for our duties,” he says. “Kwon’s program isn’t just for our communities, it’s for ourselves so we can go home to our families every day.”

### SOME PAIN, MUCH TO GAIN

Kwon’s experience working with law enforcement began in Kansas at Washburn University, where he was the lead researcher for a fitness testing and training project for the Topeka, Kan., SWAT team, and for a similar project that studied youth in a rural school district.

Back at HSU’s Human Performance Lab, Campbell and others have found that Kwon’s tests aren’t walks in the park. They are rigorous runs on a treadmill—in addition to leg presses, bench presses, lat pulldowns, sideways sprints, and slew of other exercises.

Kwon’s program begins with a detailed picture of a person’s overall fitness, measured by two components: health (muscular strength and endurance, cardio respiratory fitness, and flexibility and body composition) and skill level (speed, power, agility, reaction time, balance, and coordination). Based on these assessments, Kwon creates an exercise regimen that gets progressively harder over 12 weeks.

Kwon emphasizes that participants are doing true exercise, not physical activity or sports.

“When I was a young man in Korea, I was a body builder and a ‘bboy’—break dancer—and at that time I wasn’t educated about what exercise is,” he says. “I was doing physical activity or extreme sports, not exercise, which is planned and structured physical activity. To do exercise you need data. Only a university—not a personal trainer—can accumulate data to make physical fitness norms for a special population.”



A pallet is set ablaze in a gutted McKinleyville home during a Live Fire exercise.

Even for Campbell, who runs marathons and ultra-marathons, the tests were surprisingly challenging.

“I’m not as fit as I thought I was,” he says with a laugh.

### SWEAT EQUITY PAYING OFF

Already, the firefighters who are participating in the study are seeing results. “We’d have a meeting and they’d bring in boxes of donuts,” says Campbell. “It used to drive me crazy. There’s been a cultural shift. People are eating healthy and they’re getting skinny.”

Campbell’s fitness improved as well. His initial 1.5-mile run speed was 9.4 mph. After four weeks, his speed increased 12.7 percent to 10.6 mph.

Also reaping the benefits of the program is the team of student interns and other volunteers who help Kwon with his research, giving them a chance to apply what they learn outside the classroom.

“I found that working one-on-one like this—building rapport, motivating them, correcting form, understanding and explaining the importance of the evaluation process—has been invaluable,” says Kinesiology graduate student Gil Spitz

Being able to provide that real-world experience makes HSU the perfect place to conduct his research, says Kwon. “I believe being at HSU has helped my research, and allowed me to perform community service and get my students involved for a better teaching environment. This is perfect to me.”

Kwon was recently awarded \$5,000 through HSU’s College of Professional Studies Faculty Research Fund, which will help fund more student assistants and equipment.

He has high hopes for his research. He envisions developing a program for all firefighters and officers in Humboldt County, and the Arcata Police Department has already expressed interest in joining the program.

Kwon also hopes that one day, other states can use his program as a model to improve fitness for their firefighters and police officers.

# FIREFIGHTER FOR A DAY

By Aileen Yoo

INSIDE THE HALLWAY of a burning home, the first thing I notice is the smoke. It’s light gray, almost silver. It’s thick. Through my mask I see firefighter Brett Kennard. Beyond him, I can’t see a thing—not walls, not the fire hose at our feet or the room just feet away where a fire is raging. And I can’t see Rescue Randy, the dummy I’m supposed to rescue.



I try to take slow, deep breaths to calm my sour stomach. I silently repeat the pointers I picked up in the eight weeks leading up to this moment: Breathe slowly. Go to your happy place. Two sets of three siren-blasts means get out. DO NOT take off your mask. I’m in good hands, I tell myself. I’m going to rock this fire.

It’s the morning of July 14 and I’m in the middle of the Arcata Fire District’s fire training exercise, a “Live Fire,” at a McKinleyville home that’s been gutted for this purpose. For the first time, the AFD is hosting “guest firefighters,” HSU Kinesiology Professor Young Sub Kwon, his two graduate students, Gil Spitz and Jack Thorpe, and me.

Invited by AFD Battalion Chief Sean Campbell, one of the biggest proponents of Young’s fitness and training program for local firefighters and law enforcement, we’re here to experience the rigors and stress of firefighting and to understand the important role fitness plays in a firefighter’s performance. Personally, I’m there because as a writer, I know walking in a firefighter’s boots would make a great story. HOW COULD I SAY NO?

So far, I have no regrets. Before finding myself in this hallway, I had been crouched inside the house, along with 20 plus firefighters, observing a fierce column of flames crawl up a wall and, later, a demonstration on extinguishing techniques.

Although terrified, I had stayed calm. The air was hot, but not that hot. My 70 pounds of gear? Not that heavy. The training I had done beforehand (moving more, eating less) has paid off. I had emerged physically and mentally unscathed.

Don't get me wrong, I'm nervous, which shows in the way I handle my gear. In between exercises I've forgotten my gloves and put my helmet on backwards. But I am exhilarated and ready to find Randy.

I'm with my team—an interesting bunch with varying levels of experience. The leader is Lt. Ross McDonald, a soft-spoken veteran with a kind face, and the easy-going Brett Kennard ('13 Kinesiology), a career firefighter as well. There are also two volunteers—Jeraud Williams (Child Development), who has formidable presence, and the energetic Matt Cendejas (Recreation Administration). Young, Jack, and Gil have been assigned to their own team and each group has been rotating through different duties, the main being Rescue and Fire Attack.

We're the Rescue team and after duck-walking our way around the living room and searching a small bedroom, we're waiting in a narrow hallway just outside the room where Young and his Fire Attack team are putting out a fire.

As we wait, I begin to feel uneasy. The smoke is relentless and it seems to be getting noisier. There are muffled shouts, Sean's voice crackling over radios strapped to everyone's chest, and piercing chirps of the SCBA alarm, which goes off when its wearer doesn't move.

Suddenly I hear: "Fire Attack! Where's Fire Attack!?"

It's Sean. Where is Fire Attack? Why's he asking where fire attack is? And who's putting out the fire? I hear thudding footsteps and then I'm roughly shoved against my compressed air tank, which is pressed tightly against the wall.

We've found Fire Attack. They're in the hallway, trying to squeeze past us.

I loathe crowds. Needless to say, with two teams, several bulky bodies in one 4-foot-wide hallway, it's very crowded. My throat constricts. There's shouting and more thuds. I can't move. I'm trapped. Where's the closest exit? Why the @#\*%!&%@ am I here? I'm going to throw up.

Brett looks over his shoulder and calmly announces that we're going to wait here until Fire Attack gets out of the way. He then tells us to slow our breathing and conserve air. "Breathe in, breathe out. Breathe out. Breathe in." But in the smoke and heat and chaos, my



heart's racing. I can't hold my breath. The feeling of nausea comes in a surge.

I clench Brett's arm. He looks back. "Are you okay?" I'm speechless and bug-eyed. Brett reassures me that I'm safe and that if I need to leave, he can get me out in seconds. "Do you need to leave?" I'm this far in. There is NO way I'm leaving. I shake my head.

The hallway opens up and we're on the move. Brett and I get on our hands and knees. He moves quickly, like a crab, sweeping the floor with the handle of his ax. Next to him, I can barely keep up. My fingers lightly touch the ground as though looking for a lost contact lens.

Brett stands and scans the room with his flashlight. The beam stops on a face—eyes open, expressionless, and

staring right at us. It's Randy. He's pinned under a pallet and for one startling second, he looks real. Brett flips over the pallet. I'm then asked to pick up a leg. My stomach does somersaults.

"Go to your happy place," says Ross. I'm not in my happy place. I'm in the least happiest place I know. Somehow I muster the will to grab a leg. Ross grabs the other and Brett picks up Randy's torso. Randy is heavy and unwieldy, forcing us to waddle awkwardly. I'm panting and my arms ache. I begin to regret not working out more.

We make our way back to the hallway, but Fire Attack is just in front of us. We've stalled and have been asked to wait. Brett, however, decides it's time to find another exit and apparently, I'm the one who's going to help find it.

"Door!" he shouts. I give him a blank look.

"Aileen! Door!"

Seriously? He wants me to do more? I look right and there's a faint trace of a door.

"Door!" Brett shouts.

Ohforgodsakes. I'm irritated that I'm being yelled at and that I'm the holdup. I'm about to tell him there's no knob but I'm too afraid to open my mouth because the toast I had for breakfast has pooled in my throat.

Suddenly, we're on the move again and waddle out the door. As soon as Randy's on the ground, I claw at my mask. I try to find a buckle, strap—anything—to pull it off. I'm frantic.

My teammates are around me and I feel some tugs and soon, the mask is off and I'm breathing real outside air. My face is swollen and sweaty. My knees are shaking. I'm asked if I'm okay. Yes, I mumble as I double over. I tell myself, do not vomit in front of everyone.

As the nausea subsides, I'm stunned. Stunned that what I thought was my strongest suit—my mental fortitude—had crumbled. After several minutes of cooling off and licking my wounds, I'm asked if I want to go back in, to attack the fire.



One of the Live Fire exercises entailed carrying a hose and extinguishing a fire inside the home. For me, the worst part was the smoke. Luckily, Matt, Jeraud, Brett and Ross had my back—I couldn't have asked for a better team.



There are times you have to walk away from a challenge. This is not that time. I need redemption. I put on my mask and helmet, but as we wait for the okay to go in, I begin to panic. Brett, who seems to sense my anxiety, sings "Come on Aileen," an annoying song from the '80s. The sight of a firefighter in full gear singing and jiggling makes me laugh and relax.

Cleared to go, we drag the hose in until we reach the same smoky back room. Ross and Matt are in front, at the nozzle, and I'm directly behind them. Ross commands to Matt: "Hit the fire!" The hose tightens from the rush of water. A thick white column shoots upward and hits the ceiling. The noise is jarring. I'm going to be sick.

I tap Ross' shoulder. "I think I'm going to throw up. I need to leave."

"Do we need to leave?"

Do we need to leave? Um, yes. We need to leave. NOW. Later Ross explained that he hadn't wanted me to miss the experience, but in the moment I can't believe he's not ushering me out.

I remind myself: this will be over soon. "I'm okay," I say. We search the steamy, drenched room in the crackling of the still smoldering fire.

After we pull the hose back outside, Matt says, "You did a great job."

"What exactly is a 'great job'?" I ask.

"You didn't pull off your mask."

That night, I lay in bed, exhausted, replaying the hallway scene in my head, thinking of how staying in shape is vital for a firefighter. As obvious as that was before, I (and my body) truly understood it. I was relieved to have this experience behind me and look forward to tomorrow, when I'll be at my desk. I'll be writing about the hallway and my near brush with vomit. I'll be away from smoke and heat and chaos and far away from fire. I'll hear news about the wildfires raging across the state and I'll think about the AFD—suited up, shouting through their masks and charging into the heart of a fire. No problem. 🚒