



## **Jim Moseley Executive Bio**

Jim Moseley is a deeply curious Phd with a knack for reverse engineering solutions to big problems. A native Kansas City Missourian, it was living in the state of California that led him to direct those talents toward wildfire solutions that would really make a difference.

In 2017 when nineteen elite hotshot firefighters perished in an Arizona blaze under their department issued portable fire shelters, he was spurred into motion. It was an extemporaneous visit to Forrest Machines in California's Santa Clarita Valley who built parts for fighter jets that ignited a 3 year product development journey.

"I literally came to the doorstep to request a tour of the facility," Moseley explains. There he met CEO Brad Lutz who was using materials that are found in aerospace heat tiles that could withstand the intense heat of reentering the earth's atmosphere (roughly 2,900 degrees Fahrenheit). Moseley began to experiment with the material to reengineer better fire blankets. He also learned about Inconel, a metal that could withstand extreme levels of heat and be mixed into a sprayable solution. It was here that the seed for Sun FireDefense was planted.

Jim first started testing out fire blankets, finding that the best and most protective way to assemble them was by quilting the heat-absorbing fabric. The only problem was that the quilting left holes which left the fire blanket users vulnerable. His solution was to plug those holes with the heat-absorbing Inconel spray. After reducing Inconel to a powder, and learning the ins and outs of the way it reacted to heat, Jim started testing different formulas. His desired outcome- an Inconel hybrid formula that would expand and contract depending on the heat level (as Inconel does when in contact with heat), that was also light and flexible enough to fold with the fire blanket fabric. Jim consulted with his network of scientists and chemists until he got the formula right.

*"I thought- I need something that I can spray that would be flexible. I didn't know the formula, but I had the idea. It ended up being about the resins and a superalloy, five times lighter than steel that he had reduced to a powder."*

Once he had the formula perfected, he shifted his focus to developing a flame retardant spray that would work on wood, leading him to develop and patent SPF 3000, the flame retardant, self-extinguishing coating that bonds to wood, polymers, metals, fabrics, fiberglass, and plastics.

To get SunFireDefense where it is today, Jim was relentless when it came to testing and certifications. To start, it was important that his solution be suitable for the extreme heat caused by wildfire for a prolonged period of time, so he originally tested his solution at 3000 degrees Fahrenheit (wildfires burn at approximately 1,500 degrees Fahrenheit) with very little flame spread, hence the name SPF3000. He also needed it to be a clear substance for aesthetic purposes (it was to be sprayed on homes after all), and non-toxic. Lastly, he wanted the solution to work differently than ordinary intumescent offers which expand up to 100-200 times, don't absorb into the surface, and create a very hard protective barrier that is arduous and costly to remove. These solutions are also ineffective after one fire exposure. The brilliance of SPF3000 is in the way it expands into the surface it covers, forming a barrier

between the fire and its fuel- oxygen. Once the heat is removed, the solution contracts, leaving the surface undamaged.

Only a few years later, Sun FireDefense now offers several life and home-saving products and services. From SPF3000 to Fire Shield Blankets, to ColdFire, a non-toxic, biodegradable, Class A, B, and D, fire extinguisher fluid that can be mixed into a sprinkler system's water reserve to douse fires and prevent spread and damage. SUN FireDefense also offers a Home Protection System, a fire sprinkler system that is triggered automatically by perimeter heat sensors, coating your home in the hybrid liquid solution, adding an additional layer of safety to a home.

Interestingly enough, despite growing Sun FireDefense into a company that is celebrated by experts in fire safety, he is a musician at heart. He credits his musical background for shaping the way he thinks outside of the box. A prominent 19th-century Russian romantic composer and chemist Alexander Borodin once compared building chemical compounds to building musical chords. A preposterous notion at the time, that would only come to be appreciated a century later. This is one of the many interesting facts about Jim Moseley, who in his former professional life was a Grammy-nominated trombonist who worked with Frank Sinatra, his son Frank Junior, saxophone legend Grover Washington, The Pussycat Dolls, Disney, and the London Symphony, just to name a few. He also was a fashion entrepreneur whose line, Kaptain Leather Bubble Designs, was worn by the royalty of rock 'n roll like the Black Eyed Peas, Ringo Starr, Keith Richards, ZZ Tops, and Miley Cyrus.