



**BRIAN S. BRADKE, PH.D.**  
Executive Vice President & COO  
Spotlight Labs



**Dr. Brian Bradke** is the Executive Vice President and Chief Operating Officer of Spotlight Labs, a human performance technology company focused on identifying and minimizing risks in dynamic, high-risk occupations using artificial intelligence to aid in the development of algorithms and sensor systems. As the COO, he has been responsible for the design, manufacture, and initial fielding of the company's flagship product: *SPYDR* – a customizable, open-architecture, human performance, and environmental monitoring ecosystem.



After earning a Master of Science degree in Mechanical Engineering from Stanford University in 2005, Dr. Bradke returned to Rensselaer to begin work on a Ph.D. in Biomedical Engineering. Intrigued by the bone loss experienced by astronauts on orbit, he endeavored to study and better characterize osteoporosis on Earth. Working under the supervision of Dr. Deepak Vashishth, he began studying the biochemical changes in bone's collagen structure, demonstrating the feasibility of cleaving protein crosslinks with a novel compound.

In 2007, he took a leave of absence from the doctoral program at Rensselaer to attend the Academy of Military Science, McGhee-Tyson ANGB, TN. Upon graduation, he was commissioned a 2<sup>nd</sup> Lieutenant in the Air Force Reserve and was distinguished as class "Honor Graduate", ranking #1 of 102 officer candidates. He next attended Undergraduate Pilot Training at Columbus AFB, MS, before attending F-16 initial qualification at Luke AFB, AZ.

In 2009, he resumed his Doctoral candidacy at Rensselaer and was reassigned to the 119<sup>th</sup> Fighter Squadron "Jersey Devils", in Atlantic City, NJ. While working part-time on his degree, Major Bradke was deployed to numerous locations including Iraq and Afghanistan where he was awarded two air medals, an aerial achievement medal, and the Gerard Trophy for "Heroic and Lifesaving Action during Combat Flight."

After returning from Afghanistan, Maj Bradke completed F-16 Instructor Pilot Qualification and was assigned as Chief of Aircrew Training for the 119<sup>th</sup> Fighter Squadron. In 2014, he completed and successfully defended his dissertation which combined practical and computational methods to elucidate age-related changes in the chemistry, structure, and strength of human vertebrae.

From 2014 to 2020, Dr. Bradke was a professor of Mechanical Engineering at Norwich University. His research spans both medical and engineering disciplines, working to enhance efficacy and survivability of pilots, passengers, and crewmembers during high-performance flight. His most recent works have focused on improving communications and hearing protection for pilots using bone conduction technology, as well as novel physiological sensing technologies and wearable sensor integrations.

Dr. Bradke holds the aeronautical rating of "Instructor Pilot" with over 1,500 flying hours in F-16C/D, AT-38C, T-38C, T-37B, PA-28, and C-1X2 aircraft. He has authored dozens of papers, patents, and technical manuals, and has consulted on the development of combat aircraft, unmanned vehicles, and commercial spacecraft.