Focus and dedication—often to the exclusion of all else—are the most common paths to greatness. Athletes train all day, every day, to reach the pinnacle of their sport. Successful CEOs are all business. Scientists are no different; often spending their lives in a lab to create a device or instrument that can change the world.

But sometimes an individual comes along that refuses the mold. Their achievements are as wide ranging as they are spectacular, reminding us that greatness lies inside and reveals itself through hard work.

“I’ve known Jim Wyant for almost 20 years. He’s an outstanding educator; a talented, innovative, and award-winning engineer; an accomplished and distinguished academic; a successful entrepreneur and industrial leader; a generous contributor to the optics community in general and to SPIE in particular; and an all-around great guy,” says Dennis Hall, associate provost of research at Vanderbilt University (Nashville, TN). “I can think of no one I would endorse more enthusiastically for SPIE’s Gold Medal than Jim Wyant.”

From modest beginnings

SPIE’s Gold Medal is the highest honor the Society bestows. Awarded annually, the Gold Medal of the Society recognizes outstanding engineering or scientific accomplishments in optics, electro-optics, or photographic technologies or applications. The 2003 Gold Medal recipient rose to the top of his industry, became director of a major research and education institution, created one of the first companies to produce interferometers for inline production, and helped to bring the world into an era of personal computing by providing equipment to create mass-producible hard drives. Like many American success stories, however, Wyant’s origins were more modest if no less important to his final success.
SPIE Fellow James Wyant’s determination and work ethic grew from the family farm in Ohio, just south of the Michigan border. While days were spent with a farmer’s concerns—plowing, weeding, feeding and attending to livestock—mornings and evenings were spent tinkering and exploring. “From the age of five or six, I always had a workshop,” Wyant says. “First it was mechanical things, then electrical and finally electronics.”

The family persevered through the death of his father when Jim was five years old. By the age of 15, wiry Wyant was responsible for the family’s 28,000 chickens, and he started a business baling and selling tens of thousands of bales of hay each year, all while running track in his spare time. His love for running and engineering blossomed at the Case Western Institute of Technology (Cleveland, OH), where he was captain of the cross-country team his senior year while earning a BS in physics. The running continued, figuratively, for three more years as Wyant earned both an MS and PhD in optics at the University of Rochester (Rochester, NY).

While earning his advanced degrees, Wyant’s thirst for knowledge developed into a love affair with academia that continues today. From instructor and lecturer at Lowell Technological Institute (Lowell, MA) in 1969 to his current position as director and professor at the University of Arizona’s Optical Sciences Center (Tucson, AZ), giving back to young engineers has been a central focus to Wyant’s long career. “During my years [in industry], the plan was always to go back to teaching. I love university life, working with students and teaching.” Wyant said.

“I can state without fear of contradiction that Jim Wyant is one of the best teachers the Optical Sciences Center has ever had,” comments Jack Gaskill, SPIE past president and professor emeritus at the University of Arizona.

Vanderbilt’s Hall expands on the scholastic theme. “My personal experience with Jim ranged over most of the 20 years I spent on the faculty of the University of Rochester’s Institute of Optics. Each summer, Jim would teach a three-hour lecture . . . earning rave reviews in the process. Remarkably, Jim would never let me pay him a standard lecture fee or reimburse him for his travel expenses from Tucson to Rochester . . . [He offered] his time freely to his alma mater. That one recurring episode captures the essence of the generous spirit that motivates Jim Wyant.” In 2001 Wyant and his wife Louise endowed the Givens Chair in Optics at the University of Rochester honoring Jim’s former professor M. Parker Givens.

Dedication to the community

Wyant’s contributions go far beyond the classroom. Although best known as a founder and president of WYKO Corp. (Tucson, AZ), which was acquired by Veeco in 1997, Wyant holds six patents and personally developed several new categories of interferometers, including phase-shifting interferometry; the double-frequency grating shearing interferometer; interferometric sensors for adaptive optics systems; and the use of computer-generated holograms to test aspheric surfaces among many other surface profile techniques.

“Jim’s capability to implement the physics/optics theory into the practical domain is uncanny,” says SPIE Fellow Eustace L. Dereniak of the Optical Sciences Center. “Most people do not have the capability to both be able to develop new theories and implement these theories into practice the way Jim has.”

Wyant’s work has resulted in hundreds of publications and many awards, including a SPIE Technology Achievement Award in 1988 for work in optical quality metrology, four Photonics Circle of Excellence Awards, a 1993 R&D 100 Award, and the Joseph Fraunhofer Award from the Optical Society of America (OSA). He also garnered the University of Rochester College of Engineering Distinguished Alumnus Award in 1994.

In addition to his educational and commercial success, Wyant’s commitment to the optical community is evidenced by his editorship of several books, journals, and proceedings—often in addition his position as chairman and conference organizer.

His contributions specifically to SPIE are numerous as well. A member since 1972, Wyant has served on the Board of Governors, the Symposia Committee, the Awards Committee, the Fellows Committee, and currently serves on the President’s Advisory Committee. SPIE members honored Wyant by electing him president of SPIE for 1986. This year, SPIE honors Wyant’s life by giving him the Society’s highest honor, the Gold Medal.