



### **Gerald B Stringfellow**

April 26, 1942 ~ October 3, 2025

Gerald “Jerry” Stringfellow, a leader in semiconductor synthesis and educator, passed away in Salt Lake City, Utah on October 3, 2025, at the age of 83. Jerry was a key figure in the development of epitaxial techniques essential to most electronic and optoelectronic devices and systems, ranging from high-speed communications to solid-state lighting. His contributions to the underlying science of the epitaxial growth of compound semiconductors were important for the development of the technology and for improving device performance.

Jerry was born and raised in Salt Lake City, Utah. While in his freshman year in High School, he met his future wife and companion, Barbara Farr. Barbara often accompanied Gerry to conferences and functions and was a familiar friendly face to many. His love of science was evident from early on when he developed interests in chemistry and science. He obtained a B.S. degree in condensed matter physics and a Ph.D. in 1968 with a thesis on ‘Photoelectric Properties of Zinc Selenide’, both from Stanford University, foreshadowing a long career in semiconductor research. From graduate school, Jerry joined the Hewlett Packard Solid State Research Laboratory in Palo Alto. At this lab, Jerry published seminal work on the thermodynamics and phase composition of many semiconductor alloys. His work on thermodynamics of semiconducting materials continued throughout his career. He proposed and utilized the delta lattice parameter model for the calculation of regular solutions, allowing for the rapid and successful modeling of many complex alloy systems including the doping of semiconductors.

The largest part of his career was spent at the University of Utah starting in 1980. There he made his well-known contributions to semiconductor science and the organometallic

vapor phase epitaxy (OMVPE) technique. His contributions to the thermodynamics of alloy systems have gained renewed importance with the development of the family of nitride and metastable semiconductor alloys which underpin new advanced electronic and optoelectronic devices. He also contributed to the fundamental chemistry and reaction mechanisms of the OMVPE process and the investigation of alternative growth chemistries which could have the potential for improvement in process safety. His interest in thermodynamics and reaction kinetics was combined to help resolve the mechanism of cation-ordering in several important alloy systems, such as InGaP, where the interaction of surface chemistry and kinetics resulted in unexpected structural ordering. These broad interests and contributions resulting in more than 400 publications, including his seminal book titled “Organometallic Vapor Phase Epitaxy: Theory and Practice,” which serves as a principal entry to the field.

Jerry served two terms as Chair of the Department of Materials Science and Engineering. Stringfellow was selected as Dean of the College of Engineering in 1998. He made significant contributions to the institution with programs to increase the number of engineering graduates. He retired in June 2025 and was named Professor Emeritus. His professional service included his participation in many scientific societies, serving decades on numerous committees associated with the crystal growth and electronic materials communities. He will be remembered by his colleagues for his calm and respectful contributions and wisdom, his personal and professional integrity, and his technical insights which he shared with all. He served as a mentor to many younger scientists and engineers. His wisdom and insights will be missed.

Jerry was an active contributor to the leadership of AACG and IOCG and served on the AACG Executive Committee and was the Chair of the International Conference on Crystal Growth and Epitaxy in 2007, and other professional and conference committees in the crystal growth field. He had served as the Principal Editor for the Journal of Crystal Growth.

His contributions were recognized by many prestigious awards. He received a Humboldt Research Award and was elected to the National Academy of Engineering, as well as to the National Academy of Inventors, both in 2021. He is a Life Fellow of the IEEE and has received the Minerals, Metals and Materials Society’s John Bardeen Award, and the Governor’s Medal for Science and Technology. Stringfellow was recognized by the American Association for Crystal Growth with their highest honor, the Crystal Growth Award, in 1999, followed in 2016 by the prestigious Frank Prize from the International Organization on Crystal Growth for his pioneering work in the development of the foundations of organometallic vapor phase epitaxial growth of compound semiconductors.

Jerry was preceded in death by his parents and his brother, Dale (Jean). He is survived by his beloved wife of 63 years, Barbara, his 3 children and 3 grandchildren, and his brother, Jeff, and sister, Paulette. A celebration of his life will be held on the University of Utah campus on January 3, 2026, at the Warnock Engineering Building on the University of Utah campus.

Respectfully submitted by Thomas Kuech and Christine Wang