

**Donald E. Patterson, Ph. D.**  
**Founder and President, Tweaked Spirits, LLC.**  
**Lecturer, Department of Chemistry and Biochemistry, Texas State University**

Dr. Donald Eugene Patterson is a Founder and the President of Tweaked Spirits, LLC. (2013–present). Tweaked is a craft distiller specializing in ultra-premium vodka and gin. Dr. Patterson serves as the Head Distiller for Tweaked. He is also a Lecturer in the Department of Chemistry and Biochemistry at Texas State University – San Marcos (2014 – present). Prior to founding Tweaked, Dr. Patterson was a Principal Scientist at Nanohmics, Inc. - a high technology company based in Austin, Texas (2003 – 2012). His responsibilities there included supervising the hard optical coatings division, development of energetic polymers, anti-biofouling polymers, advanced microchip disabling devices, and research and development of diamond and other novel materials for advanced applications. Prior to joining Nanohmics, he was a Founder and Executive Vice President, Research for Extreme Devices, Inc. (1998 – 2003), a venture capital funded private company developing diamond-based field emission technology for the CRT industry. Dr. Patterson has also served as a Principal Scientist at Systems and Processes Engineering Corporation (1997 - 1998); the Director of Research and Development and a Senior Scientist for SI Diamond Technology, Inc., Houston, Texas (1991 – 1996); a Senior Research Scientist and Head of Diamond Thin Film Research at the Houston Advanced Research Center (HARC) in the Materials Science Research Center (MSRC), The Woodlands, Texas (1989 – 1993). Dr. Patterson received his B.S. with honors (1982) and M.S. degrees (1984) in Chemistry at the University of Texas at El Paso and subsequently earned a M. A. (1987) and Ph. D. (1989) in Chemistry at Rice University in Houston, Texas.

Dr. Patterson is a 30-year member of the American Chemical Society and has belonged to several professional organizations (Society for Information Displays, SPIE, and AAAS). He also belongs to the honor societies of Sigma Xi and Phi Kappa Phi. Dr. Patterson also has served on the External Advisory Board for the PREM Center for Interfaces in Materials at Texas State University – San Marcos (2012-2014) and has consulted for a number of high tech businesses. Dr. Patterson has thirteen U. S. patents, a U. S. statutory invention, and is the author or co-author of 75 publications and presentations.

## **Tweaking Diamonds: Chemistry in the Small Business World**

**Donald E. Patterson, Ph.D.**

**Founder and President, Tweaked Spirits, LLC  
Lecturer, Texas State University – San Marcos**

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Life can take many interesting and exciting turns working as a chemist/materials scientist/businessperson in the small business world. My journey started during graduate school working for my graduate advisor and quickly progressed to conducting and leading research efforts for several small businesses. In the first part of this presentation, an overview of working for small businesses will be given. Topics include the pros and cons of small business life and what to expect in small research organizations. A central thesis to this work is raising money for your research and for your company. My journey has been financed by government and private funding, angel investing, venture capital, and even going public.

Working in the small business world, a scientist/engineer will be involved with numerous and varied projects. Chemical vapor deposited (CVD) diamond films were at the core of my research for many years and will be discussed in detail. Diamond has the unique advantage in the material world of being just about the “best” at everything. Diamonds are the hardest material, have the highest thermal conductivity, are extremely chemically resistant, and are inherently superior insulators but can be doped into excellent conductors. They are also a wide band gap semiconductor and have a negative electron affinity. Diamonds are transparent throughout most of the EM spectrum making them the best optical windows of any material. They even make nice gemstones.

Finally, a brief overview of Tweaked Spirits, LLC will be presented. After years of working in a lab, it is about time to make something that everyone can enjoy!