<u>The Frank L. Giese Textile Award</u> - Frank K. Ko, Ph.D. ’70

Biography:

Frank was born in a small village in Southern China. He received his B.S. from Philadelphia College of Textiles and Science (PCT&S) in 1970 and his M.S. and Ph.D. from the Georgia Institute of Technology in 1971 and 1977, respectively. He was the first to receive a Ph.D. degree in Textile Engineering at Georgia Tech. After having spent eight years of teaching and research at PCT&S, he joined Drexel's Materials Engineering Department in 1984. Frank was appointed the visiting professor/scientist position at MIT, UCLA, Katholiek University of Leuven in Belgium, Hong Kong University of Science and Technology, Zhejiang Science and Technological University, and Donghua University in China. Since 2007, Frank has been the Canada Research Chair Tier I Professor of Advanced Fibrous Materials in the Department of Materials Engineering at the University of British Columbia in Canada and was Director of their Advanced Materials and Process Engineering Laboratory from 2007 to 2012. He has co-authored four books, 33 book chapters and seven patents. Frank has presented and published over 500 papers in the engineering design of fibrous structures for medical, industrial and composite applications. His publications have been cited more than 11,000 times with a Google h-index of 44 and serves on the editorial board of several journals. He was a member of the National Aerospace Industry's Composite Roadmap Committee, a member of the advisory committee on soldier protection for the U.S. Army Board of Sciences of the National Research Council (NRC) and a member of the advisory committee of the NRC in Canada. Frank was also a Theme leader in the Canadian NSERC sponsored Lignoworks Network on Biomaterials. In recognition of his contributions in Advanced Fibrous Materials he was elected Fellow of the Society for the Advancement of Material and Process Engineering (SAMPE) and Fellow of Textile Institute (Hon). He is a recipient of the American Society for Composites award and the Fiber Society Award for Distinguished Achievement.

Acceptance Letter:

President Spinelli, Members of the Alumni Award Committee, Fellow Alumni, Colleagues and Friends:

It is a great honor to accept the Frank L. Giese award. By honoring me, you are honoring my mentors, my students, and my family. This award is especially meaningful to me, as I was fortunate to be in the last class taught by Professor Giese before his retirement some 50 years ago. From Professor Giese, we learned to visualize fabric weave constructions in three dimensions and translate them into 2D point papers in dots and spots. Professor Giese exemplified the highly professional, caring and dedicated faculty at Textile such as professors Erkel Kaiser, Paul Siminuk, Tom Edman, Francis Zeglen, and Bill Wolfgang. I feel extremely lucky to have met Professor Frank Scardino in my last year of study at Textile, thus starting a life-long association with him as my mentor, colleague and friend. From him, I was exposed to the new concepts of fiber geometry, fiber architecture and problem solving case studies. He encouraged me to pursue graduate studies at Georgia Tech and one year before I graduated from Georgia Tech, he invited me back to textile to participate in group consulting and research in the growing area of industrial and medical textiles. My work at Textile, under Professor

Scardino's leadership with support from seasoned senior Professor Fred Fortess and creative young colleagues like Jeff Bruner and Trevor Little, played an important role in the conversion of the Canvas Product Association to the Industrial Fabric Association International (IFAI). For over eight years, we travelled all over the country accompanying the technical marketing managers of Owens Corning Fiberglass to help solve problems and find applications for fiberglass. This is the best postdoctoral training one can get, and it established a strong foundation for my research and teaching. Building on a solid foundation in textile technology and working in a conducive environment, I was lucky to have some of the brightest and hardest working students including the Pastore brothers (Anthony and Chris), the Krauland brothers (Konrad and Elmer), the Steves (Clarke and Zawislak), Peter Schmidt, Youself Tishby, Mary Williams Shafer, Benny Soebroto Ong, Fari Fallaneja, Mark Steckel, Janice Maiden, Ping Fang, Maggie D'Versa, Jenny Yu, and many more. With their assistance, we turned traditional textiles into medical implants (including the artificial tendons and ligaments with renowned hand surgeon Dr. Jim Hunter and Dr. Fred Cole at Thomas Jefferson), geotextiles and architectural structures (with Professor Bob Koerner of Drexel University and Professor Alex Messenger), and 3D net-shape textiles for aerospace composite applications.

The innovations I have achieved with my mentors, colleagues and students, would not have been possible without the unconditional support of my family (my wife Cathy, my parents, siblings, and their families, my mother-in-law Anna Lee, daughters Kara and Jana, sons-in-law Bryan Gick and Gabriel Stovall, and grandchildren Anna and Jasper Gick).

Finally, I want to thank President Spinelli for his leadership in integrating Philadelphia University with Thomas Jefferson University that will pave the way towards the creation of a unique career-oriented comprehensive university. This innovative game-changing move will undoubtedly add real value to the degree for students and alumni alike.