

The Geddes Way

At the northwest corner of the city of West Lafayette, the home of Purdue University, there is a street leading to a huge, Star Trek-looking pyramid-shaped building which is leaning forward as if about to tip over. One feels like one is entering the Twilight Zone when walking the street toward the building that houses MED Institute, Inc. The name of the street is Geddes Way. The street is, of course, named after Professor Leslie A. Geddes. This is a most appropriate name for the street, as Les Geddes was never afraid of crossing the Twilight Zone into a land whose boundaries are that of imagination. In fact, he pursued a journey into the fifth dimension of imagination throughout his entire life. To Les, imagination was the only limitation to what he did. He had a curiosity-driven, can-do-anything mindset, and such a positive attitude was the source of his endless successes until the day he died.

Les Geddes was born in 1921 in Port Gordon, Scotland. His family moved to Canada where he studied electrical engineering to obtain his B.S. and M.S. degrees from McGill University in Montreal. Then, he moved to the Baylor University College of Medicine in Texas to obtain his Ph.D. degree in physiology. Being a graduate student at Baylor brought him the opportunity to work on a part of the space program. He participated in developing impedance pneumography for measuring respiration of NASA astronauts who flew Mercury and Gemini spaceships. He also designed simple and yet effective physiological monitoring systems that are still in use today. Most recently, he designed a simple tool for effective cardiopulmonary resuscitation that can easily provide 100 pounds of force without danger of cracking a rib or the sternum.

Les married Dr. LaNelle E. Reese in 1962. LaNelle, who led the School of Nursing at Purdue University for many years, helped Les bridge the gap between engineering and medicine. Les' research on electrodes, cardiovascular, neural, and respiratory devices and restorative tissues resulted in numerous diagnostic and therapeutic methods affecting thousands of lives. He had many patents; one of them brought the largest out-licensing deal in the history of Purdue University.

Despite his sky-high scientific achievements and adoration by his peers, Les Geddes was a remarkably down-to-earth man. He was easy to access, have a conversation with, and exchange ideas. He was *always* available to those who requested time with him, no matter who or why. He was frequently the first person arriving at the meeting place, and many times, he arranged the desks and brought additional chairs to the room himself to make the meeting more pleasant and efficient. It all stemmed from his love and respect of people, and it was most pronounced in his teaching. He was masterful at guiding students in his classes and research group to be independent thinkers with ample curiosity, motivating them to be their best. His excellence in teaching inducted him into the Purdue University Book of Great Teachers in the fall of 2008. Whether we knew Les through occasional acquaintance only or on a daily basis as his colleague, our impression of him is the same, as what we saw is what he was. Like a good neighbor, he always tried to find something to help others and cherished and valued the wonderful people he had around him.

Since his arrival at Purdue University in 1974 until his official retirement in 1991 at the age of 70, Les dedicated himself to establishing the biomedical engineering research center, which

eventually became the Department of Biomedical Engineering, and then most recently the Weldon School of Biomedical Engineering. To him, retirement simply meant conducting research and teaching only with no administrative paperwork, and he loved the arrangement. For the next 18 years he served as the Showalter Distinguished Professor Emeritus of Biomedical Engineering. He came to his office before 5 a.m. and finished all his official daily business by 10 a.m. He then went back home to enjoy what he liked most, thinking. He loved thinking over a drink of Manhattan. He mentioned that he came up with many new ideas during these quiet times.

Those who interacted with Les in any capacity know that any of his new ideas was followed by experiment in a matter of hours. One day we were talking about condensing the exhaled breath for monitoring glucose levels, and in less than 24 hours, he showed me a prototype that he assembled. He then volunteered to be the first human subject for the experiment. I am 30 years his junior, but felt like I was 30 years slower with 30 times fewer ideas. One day, he left a nice bottle of liquor on my desk. It was one of the most expensive liquors one can buy. Perhaps, he wanted me to start drinking Manhattans.

Of the many awards that Geddes received during his memorable career the National Medal of Technology shines brightest. President Bush celebrated his life-long career, and Les responded by saying that "I'm not done yet." He enjoyed his research life so much so that he never thought about doing anything else. Other things simply were not as much fun as research. Following the Award Ceremony at the White House, adoring friends and colleagues at Purdue University gathered together to celebrate the event at a gallery in the new Martin C. Jischke Hall of Biomedical Engineering. After a remark thanking all of his associates through the years, Les finished his talk with a joke. "A man had a bottle of the best whisky that he cherished all his life. At the time of his final days, he gave it to his brother and asked him, 'Would you please pour this whisky on my grave?' His brother said, 'yes, of course I will, but can it go through my kidneys first?'" If the man were Les, he could have answered, "yes, but artificial kidneys only please."

A few years ago, over 200 friends gathered together at the Weldon School of Biomedical Engineering at Purdue for a tribute to Les's lifelong achievements. Each of more than 100 of Les' former students had many stories to tell, but they were all about love and respect. Les loved his students as if they were his own children. One of his former students said that the first day he joined Les' group, Les took him to a shop to buy him a razor blade to shave his beard off to make him look cleaner and more handsome. Not only has he inspired his former students, but also many scientists throughout the world. In so doing, he truly helped shape modern medical industry. His legacy will continue to inspire future generations of scientists and entrepreneurs. To keep his legacy burning brightly, Purdue University established the Dr. Leslie A. Geddes Scholarship Fund in the Weldon School of Biomedical Engineering. The School also established the Geddes Professorship through the generosity of the Cook Group to pass the torch to a new generation of biomedical engineers.

Les was never afraid of facing his final days, and continued teaching his class until 5 days before his death. Prior to his passing he asked for no funeral and no memorial. I believe that it was not necessary for him, as he was about to enter a new world where he would know how much we adored him and how we felt about his passing. Sometimes I wonder what new

biomedical devices he is thinking of in his new place, maybe over a Manhattan. I would not know, but I can say for sure that they will be for the health and well-being of others, like he left his body for medical research use for improving the quality of life for us all.

In the end, it is clear that Les lived a life that was full with no regrets by doing what he enjoyed most until his last day with us. Yes, it was his way. The Geddes Way.

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