



**UNIVERSITY OF TORONTO**  
**FACULTY OF APPLIED SCIENCE & ENGINEERING**

**Memorial Tribute to**

**WILLIAM (BILL) LESLIE CLEGHORN, PH.D., P.ENG.**

**Professor Emeritus**  
**Department of Mechanical & Industrial Engineering**

**February 27, 2018**

Be it resolved –

THAT the Council of the Faculty of Applied Science & Engineering record with deep regret the death on February 1, 2018 of Professor Emeritus William Leslie Cleghorn.

William Leslie Cleghorn, born on September 28, 1953, passed away peacefully at the North York General Hospital in Toronto on February 1, 2018 at the age of 64 years.

Bill, as he was known to his colleagues, successfully completed his Bachelors [1975], Master's [1976] and Ph.D. [1980] degrees at the University of Toronto. His dedication, commitment and inquiring mind were already clearly evident during his undergraduate years, and faculty colleagues in the Department of Mechanical Engineering were not surprised when his efforts were recognized with him securing the coveted Centennial Thesis Award, and other notable graduation prizes.

His Master's and Ph.D. dissertations addressed the sub-disciplines of kineto-elasto-dynamics and the synthesis of mechanisms, subjects that continued to fascinate Bill throughout his career. The motion and dynamic behaviour of mechanisms were critical building blocks of early mechanical engineering, when cams, linkages and gears converted potential energy sources into useful work, and these carry forward into modern day robotics where precision positioning, touch and grasping ability in robotic hands and prostheses, not unlike the Canada-arm, can confound.

Bill loved all types of mechanisms and mechanical things that moved or vibrated to achieve a unique engineering objective; in his lectures he wanted to show this mobile beauty to students, and so was always looking for the latest in document cameras, videos, and computer simulations to illustrate the principles and motions that could be contrived. Some of you might recall Bill wheeling a mobile cart laden with the very best in technology to be used in his lectures, when particular classrooms lacked the appropriate projection facilities to demonstrate what could be achieved. His award winning undergraduate text, entitled *Mechanics of Machines* was published by Oxford Press in 2000 and is a revelation in the teaching of mechanisms, that conveys the excitement of this subject matter to the student. A review of this text which comprises the very best of his lecture materials certainly conveys the meticulous innovation that took place within his lectures. It was no surprise that he was highly respected and liked by his students; he took the time to prepare his lectures and delivered the goods.

Throughout his career, Bill's teaching was recognized by various awards that included the SAE Ralph R. Teetor Award, the CSME I.W. Smith Award, the ASEE John Curtis Lecture Award, and the Canadian Professor of the Year Award in 1994, sponsored by the Council for Achievement in Support of Education. In 1991, Bill Cleghorn received the Teaching Award of the Faculty of Applied Science & Engineering; his efforts were again recognized within the University in 2006 when he received the University of Toronto President's Teaching Award for "outstanding leadership in teaching".

Upon completion of his Ph.D., Bill Cleghorn worked as a Research Engineer with MacMillian Bloedel for two years prior to accepting an Assistant Professorship at the University of Manitoba in 1982. In 1986, Bill was persuaded to continue his academic career at the University of Toronto. He was promoted to Associate Professor a year later and attained Full Professorship in 1995. In 2001, Bill Cleghorn was appointed to the endowed Clarice Chalmers Chair in Engineering Design and held this position until 2011. Bill built a vibrant research career during his tenure; he successfully supervised some 21 Ph.D. and 54 Master's students. He established effective applied research interactions with industry and published approximately 120 refereed journal publications, 300 conference papers, and held six Canadian patents.

Bill also made a significant contribution to the development of engineering education and many of his papers and presentations at engineering conferences specifically addressed educational procedures and methodologies. Within this educational framework, Bill pioneered the Partners for the Advancement of Collaborative Engineering Education, or PACE, program at the University of Toronto. He fostered collaboration with industry and worked tirelessly with undergraduate students to identify suitable industrial projects that students could undertake. He forged meaningful links with the Ontario Centres of Excellence through the Connections program, which rapidly expanded to sister universities in Ontario. Bill's efforts in this capacity were most impressive, tireless and extended throughout his career. He encouraged the participation of his students in Ontario and Canadian design competitions sponsored by PACE, UTEK, Connections, the CSME and the ASEE, as well as at other major international competitions where his students gained invaluable experience and recognition for their contributions. His support of students never wavered; it was as good as it gets.

In conclusion, as it represents Bill's inspirational commitment to the engineering student, we record that in 2010 Bill Cleghorn became an Honorary Warden within Camp I of the Calling of the Ritual of an Engineer, in recognition of twenty years of continuous service as a Warden.

Be it further resolved -

THAT this tribute to Professor Emeritus William Leslie Cleghorn be inscribed into the minutes of this Council Meeting, and that copies be sent to his family as an expression of the respect and gratitude of the members of this Council.

*Prepared by Professor Emeritus Ron Venter and read by Professor Markus Bussmann.*