Allan Ian Carswell (1933-2026)

Optics Innovator, CAP Leader, and Philanthropist



Past President of the Canadian Association of Physicists Allan Carswell passed away on 29 March 2026 at the age of 93. Allan served as CAP President in 1985-86 when he contributed to the strengthening of the CAP's role in advocating for physics research and education in Canada.

Allan was an inspirational leader who joined the faculty at York University in 1968 and showed how a physicist in academia can leverage their knowledge and skills in physics to create technologies that take-off in the private sector through his research and development of LiDAR. He and his late wife, Helen Carswell, co-founded Optech Incorporated in 1974 and initially operated it out of their home with Helen taking care of the business and administrative matters of the company with Allan focusing on the technology and its exploitation. With Allan serving as its president until 2000, Optech became a global leader in LiDAR and continues to operate as Teledyne Optech. With the wealth acquired through the success of Optech, Allan and Helen established the Carswell Family Foundation which generously donated to many causes, including the CAP Foundation. His donation established a scholarship to encourage those with a physics degree to pursue a career as a secondary school teacher: the Allan Carswell Physics Educator Scholarship, which has been awarded to 12 students since its inception in 2020.

Born in Toronto on 4 October 1933, Allan Carswell attended Riverdale Collegiate and then the University of Toronto where he graduated with his Bachelor of Applied Science in Engineering Physics in 1956, his MA in 1957 and PhD in 1959. He then took up a Canadian National Research Council Postdoctoral Fellowship at the University of Amsterdam's Institute of Theoretical Physics where his research focused on high-power lasers and the new field of laser radar, now known as LiDAR. Moving back to Canada in 1961, he worked at RCA Victor Plasma Research Laboratories in Montreal. There he became the first Director of the RCA Optical and Microwave Research Laboratory, which under his leadership built the first CO_2 laser in Canada and this country's first helium-neon laser.

He returned to Toronto in 1968 where he advanced the field of LiDAR and laser research as a Professor in York University's Faculty of Science and mentored the next generation. Optech Incorporated was created as a spin-off from that work and was responsible for an expansion of LiDAR applications across a number of industries. These included airborne precision laser rangefinders used to build topographical profiles and bathymetric LiDAR systems for measuring the depth of water in oceans, lakes, and rivers. Optech's high-profile initiatives included working with NASA on its Phoenix Mars Mission to investigate the history of water on the planet as well as the potential for supporting microbial life on Mars. The robotic lander included an Optech LiDAR sensor developed under Allan Carswell's leadership, which was a key component of the Canadian Space Agency's Meteorological Station. The system sent laser pulses from the surface into the planet's atmosphere and

a telescope detected reflections from dust and ice yielding new information about the Marian atmosphere, including the first evidence of falling snow on Mars.

Allan Carswell was a founding member and board director of Ontario's Institute for Space and Terrestrial Science (now CRESTech), where he served as principal investigator overseeing LiDAR atmospheric observatories in Toronto and the Canadian High Arctic. Among his other contributions, he served as Chair and member of the National Science & Research Physics Committee (1977-81) and Chair of the committee on Laser Atmospheric Studies of the American Meteorological Association (1984-86).

Allan's accomplishments and service were recognized through numerous honours and awards. He was appointed a Fellow of the Canadian Aeronautics and Space Institute (1982) and a Fellow of the Royal Society of Canada (1984); invested as an Officer of the Order of Canada (2005); inducted into the University of Toronto Engineering Alumni Hall of Distinction (2006), the Canadian Academy of Engineering (2011), and the Order of Ontario (2021); and received the John H. Chapman Award of Excellence (2006), the Ernst & Young Ontario Entrepreneur of the Year Award (2009), the Volunteer Award from the Canadian Society of Petroleum Geologists (2010), the C.D. Howe Award from the Canadian Aeronautics and Space Institute (2010), and the Queen Elizabeth II Diamond Jubilee Medal (2012). In 2022, he was named Philanthropist of the Year by the Association of Fundraising Professionals.

In September 2019, the author of this obituary was invited by Allan to his family home in Thornhill, Ontario, to discuss how the Carswell Family Foundation might further promote physics education. Allan was a very gracious host, generously sharing stories of his family and introducing the author to Helen, whom he was lovingly caring for as she lived with dementia. His home was filled with a warmth and love that reflected Allan's deep devotion to Helen and the same generosity of spirit that characterized the work of the Carswell Family Foundation.

Through the Foundation, Allan and Helen supported education, scientific research, healthcare, and community engagement. Their philanthropy established scholarships, research chairs, and educational programs, advanced public understanding of astronomy and music education, strengthened medical education, and supported innovative Alzheimer's and dementia care, the Allan I. Carswell Observatory at York University—home to the largest telescope on a Canadian university campus—and the Canadian Association of Physicists' Allan Carswell Physics Educator Scholarship [1]. During the visit, Allan spoke with enthusiasm about founding Optech Incorporated with Helen and about the company's contribution to NASA's Phoenix Mars Mission. Allan, a truly inspirational physicist, entrepreneur, and technology pioneer, also shared that his greatest satisfactions were his family and the opportunity to give through the Foundation.

J. Michael Roney, University of Victoria

References

1. Please see the CAP website: www.cap.ca/capf/scholarships/carwell