

Five answers from Peter Canham

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Pioneer in Biophysics: Alan C. Burton (1904 – 1979) (Department of Medical Biophysics, Western University, 2010.) is a collection that explores the full scope of the former Western professor's storied career. Edited by Alfred W. L. Jay and Peter B. Canham, both former PhD students of Burton, the book chronicles the scientific career of the man who, among countless accomplishments, developed Canada's first Department of Biophysics at Western. Four years in the making, this book builds on his successful nomination for the Canadian Medical Hall of Fame, with expanded sections of pictures and text related to everything from Burton's love and authorship of scientific verse to his leadership in the London Rowing Club. *Western News* editor Jason Winders spoke with Canham about this labour of love.

WN: What are your earliest memories of Alan?

PC: The first impressions, of course, were his significant height (approximately 6-foot-3), angular features and a dignified air as a scholar. There were no other faculty members in the department, but the department was a buzz of research activity with the many graduate students and one or two technicians.

The department was in the old medical school off South Street, a building long in the tooth with dark wood fixtures and concrete floors.

Burton, on that first interview, was friendly and not intimidating in the least – wishing mainly to learn how I came to know of the department. He accepted me to join, first as a summer research student, which had higher pay than a graduate student. Later that summer, I recall quite clearly, how he was miffed that he had no copy of my academic record on file.

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WN: What of him do you still carry with you today?

PC: Burton was likely at the peak of his career, having been elected recently to the positions of President of the American Physiological Society, the Canadian Physiological Society and the Biophysical Society (of America), but these were not in evidence in his interaction with students. Coffee times were argumentative and informal learning experiences. The more audacious students would argue issues of clinical biophysics, but sometimes arguments got off track.

I recall one debate about how the VW Beetle reserve fuel tank worked. At that time there was no fuel gauge, but when you ran out of fuel, you turned a lever to access another gallon or so. If you forgot to reposition the lever after a fill-up, you would then be out of luck at the side of the road.

No one had the answer, and despite half of us being engineers or physicists, no one was charged with the task of 'finding out'.

Sometimes Burton's philosophy of science and research would come on display, either through his sharing of reviewing experiences about good or not so good manuscripts sent his way, or perhaps reciting *Albert and the Lion*, or Bacon's quote on the role of the scientist.

He was an avid sportsman in his day, and had been president of the London Rowing Club. The Burton boat was an eight-man shell named in his honour. He encouraged everyone to take an afternoon to play golf during the week, once term time had ended. That was an introduction to golf for many of us.

Burton never played particularly well, but enjoyed it immensely.

There were no formal weekly meetings of research progress, but rather stretches of continued enthusiasm from time to time, on Burton's favorite graduate project, or perhaps related to getting a student's first paper published. Then you were under scrutiny on a daily basis.

These are memories that are still with us today, brought out to a large measure by the research we did for the Canadian Medical Hall of Fame nomination, and later this book that we recently published.

What inspired you to take that a step (or two) beyond admiration and work on a book?

PC: I stayed on in the department, which was expanding from the one-man department to one with several faculty, once the undergraduate program got underway. So seeing changes of how I got to know Burton better, and appreciate his stature as a scientist, grew over many years. He was a risk-taker, and some projects fizzled completely, but he had a great respect for the undifferentiated scientist, the 'stem cell' of research – the MSc and PhD students from physics, engineering and from clinical medicine.

In that way, he could enjoy a broad frontier of science, and enjoy the virtue of asking simple questions and designing critical experiments. He rarely pushed for volumes of experiments along a continuing theme. He much preferred the adventure of a new direction. Because of this philosophy, most graduate students worked on very different projects with very different techniques.

What surprises about the man and his work did you discover once you got deep into the project?

PC: He was a private person, and some of the difficulties related to his early personal life as a scientist. Regarding his family back home in England during the war, only came to light through letters and papers discovered in old boxes and files in the department.

Even with regard to his professional life, I believe it was a surprise to almost everyone, regarding the breadth and depth of his career.

For me it was a treat to pull together the excitement about science, Burton's insight into new concepts, his love of scientific poetry and his enjoyment of sports as a hobby.

He was an exceptional teacher, which I had already appreciated to some extent. Physics is never an easy topic, and Burton had such a wonderful talent of getting the concepts clear, even for medical students.

WN: What would you like a reader to take away from this book?

PC: I would hope a reader would like to have got to know Burton personally. (I hope) one could begin to see Burton as a colourful scientific character, see far beyond the

lists of publications, numbers of high awards and supervision of a prodigious number of graduate students. (I hope) there would be a deep-down respect for an accomplished scientist, serving as a researcher during the war on blast protection and survival against cold temperatures, who took on a new direction in medical science after retirement – the challenges of cancer as an issue of cell signalling and communication, long before the concepts became broadly appreciated.

The personal side of Burton's life lives on through his only granddaughter, Janet-Lynn Morrison, who became an enthusiastic supporter throughout the project. That is featured in the book and will give the reader a sense of continuance. We would like to have got in touch with the Burton family in Britain. Alan Burton was part of a large family, with two sisters and four brothers. Their descendants would likely appreciate knowing of the book. That contact is still to complete.