

# Your say...

Dr Helmut Hügel and Professor Martin Banwell's recent article (*Chem. Aust.* 2004, 71(6), 11) brought back fond memories of Professor Harold Kroto, well known for his discovery of fullerenes and less known as an excellent molecular spectroscopist.

I left the University of Newcastle in March 1994 for University of Waterloo (Ontario, Canada) to take up the NESRC Canada International Postdoctoral Fellowship, after submitting my PhD thesis entitled 'Ab initio calculations of vibrational states of alkali metal ions'.

Shortly after I arrived at the University of Waterloo, Professor H. Kroto stopped over at the university. I was introduced to Harry, and as soon as I heard the name 'Kroto', I thought of his book *Molecular Rotational Spectra*, which helped me significantly in my PhD research. The 1975 edition of the university library book was almost kept by me for two years through renewal and re-borrow.

Two of my colleagues arrived, each with a copy of Harry's book in their hands, asking for Harry's signature. Meanwhile, I rushed to the university bookroom, hoping to purchase a copy of the book to be signed. Unfortunately, the only two copies of this specialist book had been sold.

At Harry's suggestion, I sent him an email a couple of weeks later, mentioning the book and signature. I received a copy of *Molecular Rotational Spectra* a couple of weeks later, and the note 'To Feng Wang, with my very best wishes. It gives me great pleasure to learn that you have found my book helpful in your research career. I wish you much success in the future. Harold Kroto.'

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Feng Wang, FRACI CChem

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Most of the several items on Olympic Games issues in the August edition of *Chemistry in Australia* can be related directly or indirectly to the motivation of participants. Our editor on page 3 very appropriately quotes Roger Bannister: 'Though physiology may indicate respiratory and circulatory limits to muscular effort, psychological and other factors beyond the ken of physiology set the razor's edge of defeat or victory.'

The role of motivation is also apparent in the use of performance-enhancing drugs (p. 6) and in the full use of genetic endowments (p. 9) to achieve success. However,

a further unmentioned factor is also highly linked to motivation, and may not merely lead to defeat, but to the grave injury or even death of the competitor. While this factor – the heat strain resulting from heat stress – is physiological, it is the motivational background that has been shown to bring it into effect. In Paris in 1924, admittedly in very hot weather, its effect (only 15 of the 39 entrants completed the course and four collapsed on the track) led to the 10 000 m cross-country run being banned from future Olympic track and field events.<sup>1</sup> Further evidence of the ill effect of motivation on heat strain, even when the weather is not hot, comes from an event in which, by 1995, three people had died from heat stroke, and more than 90 collapsed runners, since 1978, had been found with rectal temperatures in excess of 42°C and some in excess of 43°C.<sup>2</sup> A case-control study on subjects who collapsed in this event 'has suggested that the most highly motivated who attempt to set a personal best have a twenty-fold increased risk of collapse than do the unmotivated'.<sup>2</sup>

Those who 'dedicate their lives to expanding the boundaries of human performance' because they 'represent peak physical fitness' need to recall that physical fitness alone, while it is a necessary basis for the more effective achievement of heat acclimatisation,<sup>4,5</sup> may not, of itself, provide the safeguards against heat injury for which such acclimatisation, together with maintenance of adequate fluid balance and education on the nature of heat strain and recognition of symptoms of its onset, is essential.<sup>3</sup>

1 Noakes T. Failure to thermoregulate. In *Proceedings of the 10th Biennial Conference 'Exercise and Thermoregulation'*, Faculty of Health Sciences, University of Sydney, 1995, 25–45.

2 Sutton J.R. Simpson Desert and City to Surf. *ibid*, 49–53.

3 Sutton J.R. Guidelines for the prevention of thermal illness in sporting events. *ibid*, 349–51.

4 Pandolf K.B. Time course of heat acclimatization and its retention. In *Proceedings of International Conference on Physiological and Cognitive Performance in Extreme Environments*. Australian Institute of Sport, 2000, 51–55.

5 Withey W.R. Human heat acclimatization: what is the best method? *ibid*, 60.

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