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COMMENTARY

Dr. Roy Shephard: His Contributions to Exercise Biochemistry and Exercise Science, a Personal Perspective

Peter Tiidus¹

Dr. Roy Shephard has had a long and distinguished research career that has touched upon and influenced a very wide range of exercise science related study. This small tribute will look at Dr. Shephard's work in areas related to exercise biochemistry and on a personal note, his influence on my development as an exercise scientist working in areas related to exercise biochemistry and muscle damage and repair.

Recent years have seen a greater integration of "exercise biochemistry" into the core of exercise physiology research as well as graduate and undergraduate student education in exercise physiology. As such, it is now common for exercise physiology textbooks to contain major sections on basic metabolism, biochemistry of energy transduction, molecular aspects of muscular contraction, regulation of protein synthesis and degradation and many other aspects of cellular, biochemical and molecular physiology.

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From the ¹Department of Kinesiology & Physical Education, Wilfrid Laurier University, Waterloo ON Canada, N2L3C5 Phone: 519-884-0710 ext. 3276 Email: ptiidus@wlu.ca

The inter-relationships between what is called exercise biochemistry with the broader aspects of systems exercise physiology and exercise sciences are now viewed as integral to the understanding of the physiology of and regulation of all aspects of acute and chronic exercise responses. Things were a bit different 30-40 years ago when exercise biochemistry was a newer area of research in the exercise sciences and was still viewed as a somewhat separate area of study from the mainstream of exercise physiology. At the time the study of exercise physiology tended to be associated more with systemic aspects of cardiovascular and respiratory physiology.

Roy Shephard was one of the first exercise scientists to begin to integrate biochemistry with the study of exercise physiology with his classic textbook "Physiology and Biochemistry of Exercise" which appeared in 1982 (Shephard, 1982). His leadership also led to the introduction of "exercise biochemistry" related courses into the education of undergraduate and graduate students in Physical Education at the University of Toronto in the early 1980's when such courses were still uncommon in the undergraduate and graduate curriculum.

DR. SHEPHARD: HIS INFLUENCE ON EXERCISE BIOCHEMISTRY

In this regard, I was fortunate to come into contact with Roy relatively early in my academic career. At the time, Roy was the Director of the School of Physical and Health Education at the University of Toronto and in 1981 he asked me to help develop courses in exercise biochemistry for the undergraduate and graduate curriculum. Some time during my first years in teaching these courses, I remarked to Roy that I used reading packages of published research and review papers as the basis of the readings for my exercise biochemistry courses as there was at that time no comprehensive textbook dedicated to "exercise biochemistry". In response to these comments he produced, in what seemed to be a remarkably short time a manuscript which became the basis of his book "Biochemistry of Physical Activity" published in 1984 (Shephard, 1984). This event highlighted to me Roy's remarkable abilities to quickly integrate knowledge from a wide array of literature into a comprehensive overview. This ability was no doubt supported by Roy's seemingly photographic recall of a vast range of research papers and publications which he could quickly read and then integrate and synthesize into his writing. Roy's influence during my over 8 years of working at the University of Toronto also helped improve my skills in scientific writing and my ability to fully analyze research data as well as to appreciate the implication of research findings beyond one's immediate research designs.

In 1997, some years after I had left the University of Toronto and had furthered my research and scientific career, Roy asked me to be a speaker at a conference he was co-organizing related to physical activity, immunology, and the inflammatory response. This was another area of exercise science that Roy's wide

ranging research career had taken him into and in which he had quickly become a scientific leader. My research at the time dealt primarily with antioxidants and oxidative stress related aspects of exercise and skeletal muscle damage and adaptation. Roy asked me to extend this knowledge into aspects of overlap between redox biochemistry and inflammatory response to muscle damage for my conference presentation. This fortuitous request led me to investigate further aspects of muscle damage and repair that I had not previously considered and helped nudge me down pathways of research which I now pursue related to hormonal influences on muscle damage, inflammation, and repair mechanisms. Roy's ability to quickly comprehend the connections between different areas of scientific investigation has been among the many remarkable aspects of his career as a scientist.

Roy Shephard has been one of several key mentors in my academic and scientific career. His wide ranging influence on exercise science in Canada and around the world has highlighted the possibilities of scientific investigation. In particular his ability to appreciate and synthesize a wide range of scientific disciplines into his research and his ability to translate this knowledge into practical and accessible information for students and the public have been hallmarks of his contributions to exercise science. Roy Shephard's work continues to be a clear example of the wide range of possibilities for both basic and applied exercise sciences and the influence one person's career can have on the development of many aspects of scientific research as well as their practical applications.

Qualifications

The author's qualifications are as follows: Peter Tiidus B.Sc, M.Sc, Ph.D., FACSM.



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