

Prof. Kenneth R. Foster, Ph.D.



Kenneth R. Foster received the Ph.D. in physics from Indiana University, Bloomington Indiana USA in 1971. From 1971-1976 he was a lieutenant in the U.S. Navy, doing basic biophysical research related to the interaction of microwave radiation with biological systems. This work was part of a large effort already underway, sponsored in a number of laboratories by the U.S. government, to address both occupational safety concerns and also concerns of the public about possible health effects of radiofrequency energy.

In 1976 he joined the University of Pennsylvania to work with a pioneer in this field, Herman Schwan (now deceased). He is now Professor of Bioengineering.

Most of his technical work relates to the interaction of nonionizing radiation and biological systems. Much of his early work concerned the biophysical principles of interaction, including the dielectric properties of biological systems and their implications for mechanisms of interaction. He has published numerous papers on this subject; his review of the dielectric properties of tissues has been cited more than 475 times since its original publication in 1986, making it one of the most highly-cited papers in biomedical engineering¹.

Over the years, his interests have expanded to include risk assessment particularly as it relates to exposure to electromagnetic fields, and more recently to social and ethical implications of technology. His studies have ranged from an international dosimetric survey of public exposure to wi-fi networks (published in *Health Physics* in 2007) to ethical analyses of questions such as “should children use mobile phones?”.

Pursuing these highly interdisciplinary fields, Foster usually has worked with colleagues with complementary expertise to his own. For example he has written highly cited reviews related to possible biological effects of nonionizing electromagnetic fields, ranging from the biophysical mechanisms of interaction to reviews of the epidemiological data related to powerline or radiofrequency fields and cancer. These latter papers have been published jointly with epidemiologist Linda Erdreich and radiation biologist John Moulder. In addition, he has written or edited two books on science and the law, in collaboration with the prominent legal writer Peter Huber.

In the past few years, as an outgrowth of an assignment to teach ethics to engineering students, he has developed an interest in neuroethics. In that connection he has written and lectured extensively on topics such as ethical implications of new technologies for detection of deception, ethical implications of brain-computer interface, radiofrequency identification chips, and other technologies.

¹ K. R. Foster and H. P. Schwan, Dielectric Properties of Tissues - A Review, in *Handbook of Biological Effects of Electromagnetic Radiation*, C. Polk and E. Postow, Eds., CRC Press, 1986.

A prolific writer, Foster has published more than 100 papers in the peer-reviewed scientific literature, about two dozen book chapters, two books, and a great many journalistic pieces ranging from topics such as health effects of electromagnetic fields to software and book reviews.

Kenneth R. Foster is the Editor in Chief of *Biomedical Engineering OnLine*. Recently the *Biomedical Engineering OnLine*, an open access peer-reviewed journal, received its first Impact Factor $IF = 1.80$. This is due to a great extent to the policy pursued by the Editor in Chief Prof. Kenneth Foster, who highly contributed to the expansion of biological, medical, technical and the related with them ethic topics.

Let wish him health and creative power for new achievements.

Prof. Ivan Dotsinsky
Review Editor of *Biomedical Engineering OnLine*