# The Challenge of Materials Education for Medical Physics Students

Adelaide de Almeida

Faculdade de Filosofia, Ciências e Letras de Ribeirão Preto, Universidade de São Paulo, Brazil.
dalmeida@ffclrp.usp.br

We report our increasingly successful Medical Physics degree programs recently established at the University of São Paulo (USP). Historically, the Brazilian tropical environment, with its abundant flora and fauna, its unique parasites and natural pharmaceuticals, gave research in biology and medicine at least a century head start. University science, technology, engineering and mathematics received a major impulse in the decade of 1930 with the influx of European educators who helped develop curricula and establish the first major universities and in the two major academic centers: Rio de Janeiro and São Paulo. Since that time university science has spread throughout Brazil, with new universities still being established to attend our social needs. Early in the decade of 1980, guided by the Professor John Cameron, the University of Wisconsin Medical Physics pioneer, USP established at its Riberão Preto campus one of the first medical physics degree programs, beginning with a Ph. D. specialization, then with the much greater challenge of establishing a course leading to an undergraduate degree. The materials of medical physics are tissue and bone, and the physicist must have a minimum of understanding of the response of the human body to implanted materials, to ionizing radiation, to lasers, and to modern diagnostic instrumentation, to the things that physicists are traditionally trained to understand. We will describe details of our successful modifications of the traditional physics curriculum to produce professionals who collaborate effectively with medical professionals. Our particular experience teaching graduate and undergraduate students at USP, and the benefits to Brazilian health care that they provide, will be presented as an example.