

5th International Conference on

Clinical & Experimental Cardiology

April 27-29, 2015 Philadelphia, USA



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Cell and gene therapy for cardiovascular disorders in the age of preventive, personalized, and translational medicine

Personalized medicine is a term that means different things to different people (indeed, the definition is personalized itself). In the context of "Predictive, Preventive, and Personalized Medicine" (PPPM), it is frequently taken to refer to genetics; i.e., certain patients will respond better to a given drug because of their genotype, or certain patients are predisposed to a particular disease course due to their genetic make-up. However, personalized medicine has particular relevance in autologous cell therapy, envisioned to enable a patient's own cells to function as therapeutic agents when harvested, expanded, and returned to their bodies. Not just genotype, but chronic non-disease conditions such as age or chronic/acute disease states such as coronary artery disease can profoundly change the potential therapeutic efficacy of such cells. This talk will consider how these issues affect potential cell and gene therapies, and will examine how the concept manifests in an experimental model of autologous cell therapy using circulating angiogenic cells.

Biography

Matthew L. Springer received his bachelor's degree from the University of California, Berkeley in 1985 and his PhD from Stanford University in 1992. He remained at Stanford for his postdoctoral research and continued his research there as a senior scientist. In 2003, he joined the faculty of the University of California, San Francisco, where he is currently one of two non-clinicians on the faculty of the Division of Cardiology. He has published extensively about cell and gene therapy approaches to the treatment of cardiovascular disease, as well as the influence of environmental factors including secondhand smoke on vascular endothelial function.

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