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Following a master in Biology at the University of Wageningen, a PhD in skeletal muscle biomechanics at the Human Movement Sciences, Vrije Universiteit Amsterdam, and two post-docs at department of Physiology, Vrije Universiteit Amsterdam, directed at mitochondrial dysfunction in stunned myocardium, and at the Bioengineering dep University of Washington, Seattle, directed at cardiac models of oxygen transport, I started my own research group at the University of Amsterdam, department of Anesthesiology.

My laboratory's long term research goals are to 1) elucidate the crucial cell injury mechanisms in the heart of ischemia-reperfusion injury (IRI), heart failure, stress hyperglycemia and diabetes, and 2) develop clinical relevant strategies to combat these cell injury mechanisms. Research involves ex vivo and in vivo cardiac models with emphasis on the interaction between cardiac ion homeostasis, metabolism, inflammation, immunity and cardiac function. Important contributions from our group to the field entail the elucidation of the role of 1) glycocalyx in vascular permeability in diabetes and hyperglycemia, 2) mitochondria-hexokinase binding in cardiac IRI, diabetes and ischemic preconditioning, 3) NLRP3 inflammasome in cardiac IRI, 4) direct cardiac effects of SGLT2 inhibitors, and 5) the mitochondrial innate immune receptor NLRX1 in mPTP regulation, cardiac metabolism and I/R injury.