Biography of Nguyen Tran

Professor Nguyen Tran is Professor of Physiology at the Faculty of Medicine of the University of Lorraine (France), internationally recognized for his contributions to biomedical innovation, translational cardiovascular research, and simulation-based medical education.

Following postdoctoral research at the University of Iowa (USA), where he developed innovative experimental systems for studying microvascular and cerebral vascular reactivity, he returned to France to pursue an academic hospital career. He served as Hospital-University Assistant (Academic and Clinical position) in Biochemistry at the University Hospital of Nancy, where he initiated translational research programs exploring cardiovascular physiology and regenerative therapeutic approaches.

He subsequently joined the Faculty of Medicine of the University of Lorraine as a teacher-researcher in physiology, where he developed interdisciplinary research at the interface of cardiovascular medicine, biomedical engineering, and regenerative therapies. His work has focused on innovative approaches for the treatment of heart failure, including cell-based myocardial repair, extracorporeal circulatory support strategies, and the development of novel implantable mechanical assistance systems.

Among his major technological contributions is the development of an implantable cardiac exoskeleton designed to provide mechanical assistance without blood contact, an innovative concept aimed at improving outcomes for patients with advanced heart failure. This technology led to the filing of an international patent and the creation of the biomedical startup HANACORP, dedicated to its clinical and industrial development.

Beyond his research activities, Professor Tran is widely recognized as a pioneer of simulation-based surgical education in France. In 2005, he co-founded the School of Surgery of Nancy and has served as its co-director since 2010. Under his leadership, the center became one of the first structured institutions in France dedicated to training surgeons through advanced simulation technologies, contributing to the training of several hundred surgical residents each year.

He also co-founded the French Society for Healthcare Simulation (SoFraSimS), helping to structure national standards and promote the integration of simulation technologies in medical education. His pedagogical research has contributed to the development and scientific validation of simulation tools in various specialties including cardiac surgery, interventional cardiology, dentistry, and robotic surgery.

Professor Tran’s activities extend internationally through academic collaborations and capacity-building initiatives across Europe, Asia, and Africa. He played a key role in the creation of the National School of Surgery in Yangon (Myanmar) and has led advanced training programs in interventional cardiology, endoscopy, and ophthalmology in West Africa, contributing to the development of high-level medical education in emerging healthcare systems.

He has authored more than 100 peer-reviewed scientific publications, supervised numerous doctoral theses, and contributed to multiple national and European research programs in cardiovascular medicine and biomedical engineering.

Professor Tran is also actively involved in the translation of research into technological innovation and global medical training initiatives. He currently leads the development of the Veterinary Innovative Practices Training Center (VIP-TC) in Nancy, an international platform dedicated to advanced veterinary surgery, robotics, and medical technologies.

Through his interdisciplinary work combining physiology, engineering, medical education, and innovation, Professor Nguyen Tran contributes to shaping the future of medicine at the intersection of technology, training, and global health.