

Ketty Schwartz, Ph.D. 1937 - 2007

Ketty Schwartz, Ph.D, CNRS Director of Research in Paris, was an eminent scientist and pioneer of molecular cardiology. She was also actively involved with the promotion of patient associations and development of new therapies.

Ketty Schwartz exemplified the highest standards of translational science. Her scientific interest was firmly rooted in cardiology, and branched into clinical cardiology and surgery in the 1960s and 1970s when she provided the first analyses of rejection of human heart transplantation. In the 1980s she moved into the field of molecular cardiology and demonstrated the switch from α - to β -myosin heavy chain in cardiac development and hypertrophy. Her work then led to the development of molecular genetics in cardiology in the early 1990s with the identification of gene defects in hypertrophic cardiomyopathy, long QT syndrome, and muscular dystrophy, including *MYBPC3* and *LMNA* first mutations. In the 2000s, the final stage of her career embraced cardiovascular stem cell biology with gene- and cell-based strategies for novel treatments for muscular dystrophies and heart failure. She trained, mentored and supported many younger scientists and her science lives on in their laboratories.

She received the Silver Medal from the CNRS in 1992, the Cardiology Award of the Medical Research Foundation from the French Academy of Sciences in 2000, the Glorney-Reisbeck Award from the New York Academy of Medicine in 2002, and the Honorary Award from INSERM in 2006.

She directed several INSERM units, and became Director General of Research at the Ministry of Science (2001-2002). She was President of the scientific council of the Association Française contre les Myopathies (1998-2007) and vice-President of the administrative council of INSERM (1990-1996 and 2003-2007).

She was an active member of the ISHR from 1981. Together with Jutta Schaper, she invested much energy into the development of the European Section of the ISHR and was its Secretary from 1992-1998.

About the Award...

Created in 2018, the ISHR-ES Ketty Schwartz Award will be awarded annually to a European Researcher who has made a significant scientific contribution to cardiovascular research. The awardee will receive €1,000 and will give a Plenary Lecture at the next ISHR-ES Annual meeting. Nominees must be active members of the ISHR-ES at the time of nomination, be a resident of one of the countries of ISHR-ES (including Israel and South Africa), have not previously received an ISHR International award, and not be a current member of the ISHR-ES council.



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Ketty Schwartz Award 2020



**Ketty Schwartz, Ph.D.
1937-2007**

Award Winner

Ursula Ravens, MD, Ph.D

“Cardiac electrical activity – Stretching
the story of ion channels and
arrhythmias”

2020 Award Winner

Turin, Italy

Ursula Ravens, MD



Ursula Ravens, née Theophile, studied medicine at University of Freiburg, Germany, and University of Vienna, Austria until 1969. She did her medical doctor's degree in the Department of Physiology of Freiburg University (Albrecht Fleckenstein) where she was introduced into the fascinating world of microelectrodes and force transducers. Working on isolated cardiac tissues from Rhesus monkey, she and her supervisor Raimund Kaufmann discovered that stretching the myocardium induces membrane depolarisations that can exacerbate into spontaneous action potentials suggesting a 'mechanoelectrical feedback'. Her interest in basic science increased even more when she received a scholarship from the German Academic Exchange Service

to join the lab of one of the 'fathers' of ISHR, Richard Bing, MD, at Wayne State University, Detroit, MI, USA for one summer. This was also the place where she met her later husband Kurt Günther Ravens.

After an internship in Berlin, she did a postdoc and her 'Habilitation' (1979) in Pharmacology at the University of Kiel with Heinz Lüllmann studying the relationship between the shape of the cardiac action potential and contractile force under physiological and pharmacological perturbations. She learnt the single-cell voltage-clamp technique in Gerrit Isenberg's lab in Homburg-Saar, Germany. In 1985, Ursula obtained her first tenured professorship for Cardiovascular Pharmacology at Essen University, and established a lab for cardiac cellular electrophysiology and contractility. Since open-heart surgery and heart transplantations boomed everywhere, living human cardiac tissue from explanted failing hearts or even from healthy donor hearts not suitable for transplantation became available for scientific investigation allowing the characterization of drug actions in human diseased and healthy myocardium. When her daughter Kathrin left home for university in 1994, Ursula spent a sabbatical in Sian Harding's lab at the National Heart and Lung Institute, Imperial College, London to collaborate on β -adrenoceptor action in single human cardiomyocytes. Soon after returning to Essen, she was appointed Full Professor and Chair of the Department of Pharmacology at the Medical Faculty of Dresden in 1997. After her retirement in 2014, she seized the opportunity to join Peter Kohl as a Senior Professor in the Institute for Experimental Medicine at University of Freiburg – back to the roots.

Throughout her more than five decades in science Ursula remained loyal to her initial interest in electrophysiology, but has applied her experience in the field to many physiological and pharmacological areas including remodelling of cardiomyocytes and non-cardiomyocytes, e.g. fibroblasts; heart disease, atrial fibrillation, cardiovascular pharmacology, antiarrhythmic drugs, function-

al roles of cardiac ion channels and their pharmacological modulation, regenerative potential of stem cells in the cardiovascular system, and species differences in the pharmacological modulation of detrusor muscle function.

Apart from her over 300 scientific contributions, Ursula is a long-standing member of ISHR. She has served on Council of ISHR-ES (1999-2005) and organized the 2004 ISHR-ES Conference in Dresden, Ursula has organized two meetings of the European Working Group on Cardiac Cellular Electrophysiology in Essen and in Dresden, and presided over the 2004 Annual Meeting of the German Society of Cardiology. She has co-chaired the 2019 Gordon Research Conference on Cardiac Arrhythmia Mechanisms and will organize the 2021 conference together with David Christini, New York, NY.

Ursula is fellow of ESC, AHA, ISHR and honorary Fellow of the British Pharmacological Society. She received an honorary professorship from the 3rd Military Hospital Medical School Beijing, an honorary doctor's degree from University of Szeged, a Medal of Merit of ISHR-ES, the Federal Cross of Merit (Germany), and is a member of the German National Academy of Science (Leopoldina).