

CURRICULUM VITAE



WALPOTH, Beat H., MD

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STATUS Swiss; born in Zürich, Switzerland, September 19, 1945; 4 children

CURRENT POSITION & PROFILE

Founder and CEO of CardioBeat Sarl, a consulting company for cardiovascular research, bio- & med-tech.

Highlights: Consulting for cardiovascular research and development, experimental and clinical studies.

International contacts, congress organisation and good funding.

Visiting Professor, University of Verona, Italy for: Attività di Didattica e Ricerca cardiovascolare.

Emeritus Cardiovascular surgeon, Head of Cardiovascular Research (clinical and experimental), University Hospital and Medical Faculty of the University of Geneva.

Past President of the European Society for Artificial Organs (ESAO) 2006-2008.

MAJOR ACHIEVEMENTS

Development of a novel, bio-degradable synthetic tissue-engineered vascular prosthesis.

Initiation of an International Hypothermia Registry and first author of the New England Journal of Medicine article on the outcome of accidental hypothermic patients.

Team member of the first successful xeno heart transplantation.

Clinical introduction of hemofiltration and transit time flow measurement in cardiovascular surgery. First 'in man' description of internal mammary artery flow-perfusion-mismatch during CABG and graft remodelling over time.

SCHOOLS	1951-1955	Primary School, Zurich & Paris
	1956-1957	Lycee Pasteur, Paris
	1958-1964	College (ENSR), Lausanne

GRADUATION:	June, 1964	Federal Maturity Exam, Geneva
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MEDICAL SCHOOL:		
	1964-1972	University of Zurich, Medical School

MEDICAL DEGREE:		
	Dec. 1972	Graduation of Medical School, Zurich M.D. Degree and License

Electives: (1968-1971)	Aug.-Oct. 1968	University of Bologna	(Prof. G. Antuono, Medicine)
	Oct.-Feb. 1969-70	Guy's Hospital, London	University Medical School (Dr. C.L. Joiner, Dr. R. Kauntze, Medicine)
	Jun-Sep. 1970	U.C.H. University College Hospital, London	(Prof. Lord M. Rosenheim, Medicine)
	Sep.-Jan. 1970-71	Hospital Zurich-Horgen	(Dr. R. Fink, Surgery)
	Jan.-Feb. 1971	University Hospital, Zurich	(Prof. E. Held, Gynecology & Obstetrics)
	Aug-Sept. 1971	Hôpital des Enfants Malades, Paris	(Prof. J. Vialatte, Pediatrics)

PROFESSIONAL EXPERIENCE & POSTGRADUATE TRAINING

1973-1974	Peter Bent Brigham Hospital, Boston (Pathology Internship, Prof. G. Dammin)
1974-1975	Peter Bent Brigham Hospital, Boston (Surgical residency, Prof. F.D. Moore) Harvard medical School, Teaching Fellowship appointment
1975-1982	Surgical Clinic A, University Hospital, Zurich (Surgery including Thoracic & Cardiovascular training, Prof. A. Senning)
1982-1984	Department of Cardiovascular Surgery Stanford University, Stanford, California (Postdoctoral Research Scholar, 2 years, Prof. N. Shumway)
1984	Department of Cardiothoracic Surgery Loma Linda University Medical Center (Postdoctoral Clinical Fellowship, 3 months, Dr. J. Jacobson, Dr. L. Bailey)
1985-1986	Service of Cardiovascular Surgery, Department of Surgery, University Hospital Geneva (Junior Faculty with clinical and experimental activity, 18 months, Prof. B. Faidutti)
1986-2002	Department of Thoracic and Cardiovascular Surgery University Hospital Bern (Faculty with Clinical, Research & Teaching appointments, Prof. U. Althaus / Prof. T. Carrel)
2002-2010	Médecin Adjoint Agrégé, Service of Cardiovascular Surgery, Department of Surgery, Director of Clinical & Experimental Research, HUG (Prof. A. Kalangos)
2011-2016	Médecin Consultant Bénévole, Service of Cardiovascular Surgery, Department of Surgery, Director of Clinical & Experimental Research, HUG (Profs. A. Kalangos, C. Huber)

Rotating Residencies (1976-1982):

1976-1977	Children's Hospital Zurich, Pediatric Surgery (Prof. P. Rickham, 8 months)
1977	Department of Anesthesiology, University Hospital, Zurich (Prof. G. Hossli, 3 months)
1977-1978	Cardiovascular Research, Surgical Clinic A, University Hospital, Zurich (Prof. M. Turina, Prof. A. Senning, 1 year)
1978	Urology, University Hospital Zurich (Prof. G. Mayor, 6 months)
1979-1980	Regional Hospital, Walenstadt (Surgery) (Dr. M. Cadalbert, Dr. B. Simeon, 1 year)
1980-1982	Surgical Clinic A, University Hospital, Zurich (Cardiovascular training & research Prof. A. Senning)

CERTIFICATION

1981	Medical Doctorate (Thesis), University of Zurich
1982	Board Certification (FMH) for Surgery (including Thoracic & Cardiovascular training)
2005	Privat Docent, Medical Faculty, University of Geneva

TEACHING APPOINTMENTS

1974-1975	<u>Harvard Medical School</u> , USA, teaching fellowship <u>Inselspital, University of Berne</u> :
1987-2002	Student teaching (Bedside)
1988-2002	In charge of postgraduate teaching and conferences
1992-2002	In charge of clinical and experimental research and teaching <u>University Hospital of Geneva</u> :
2002-2010	Graduate & Postgraduate teaching at the University of Geneva
2004 -	Swiss partner, International Faculty of Artificial Organs (INFA)
2005 -	Co-founder, Director and teacher of the Internationally Co-tutored PhD Course in biotechnology and bioengineering with specialization in heart replacement, <u>Universities of Geneva and Verona (visiting professorship)</u>
2008-2010	Initiation of Dry/Wet Lab Training for cardiovascular surgeons,
2009-2010	Cardiovascular Research Courses (8 afternoons)
2014-	Rescue Mountain Teaching Session for the Master Course in Mountain Medicine, University of Insubria, Varese, EURAC, Bolzano, Italy & RESAMONT, Chamonix, France

SCHOLARSHIP AWARDS

1982-1984	Swiss Heart Foundation & Foundation for academic education: Stanford University Heart Transplant Training
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RESEARCH AWARDS

1990	"Le Grand prix du Jury" of the International NMR Meeting in Lyon <i>Assessment of Cardiac Rejection with Nuclear Magnetic Resonance with and without Immunosuppressive Therapy</i>
1993	Second prize of the Euroanaesthesia Meeting 1993 in Berne 1993 <i>Quality control of different methods of autologous blood salvage in cardiac surgery</i>
1993	Ernst-Derra-Prize of the German Society for Thoracic and Cardiovascular Surgery <i>MR Spectroscopy for assessing myocardial rejection in the transplanted rat heart</i>
1995	Award of the Swiss Society for Research in Surgery (SSRS) <i>Assessment of Troponin-T for detection of cardiac rejection.</i>
1996	Prize of the Schweiz. Rundschau für Medizin (with Th. Locher) <i>Differenzialdiagnose des Kreislaufstillstandes hypothermer Lawinenopfer: retrospektive Analyse von 32 Lawinenunfällen</i>
1999	Arbeitsgruppe Herzinsuffizienz (young investigator award with D. Springe) <i>Einfluss der mechanischen Kreislauf-unterstützung auf den koronaren Blutfluss“</i>
2005	Turkish Society for Vascular Surgery (Best Young Investigator Prize with Dr. Mustafa Cikirikcioglu)
2005	European Society for Vascular Surgery (ESVS), prize for the Annual Mtg, Japanese Society for Vascular Surgery, Hokkaido, Japan (with Dr. Mustafa Cikirikcioglu) <i>New biodegradable scaffolds for vascular tissue engineering: from the polymer to the rat aorta.</i>
2005	European Society for Surgical Research. Walter Brendel Awardee Session, 3 rd position (with Dr. Mustafa Cikirikcioglu)
2005	Société Suisse pour la Science des Animaux de Laboratoire Prix 2005 (with Dr. Vet Med Suzanne Osorio-da Cruz)
2006	Research prize: French Society of Vascular Surgery, Research prize: Italian Society of Vascular Surgery (with Dr. Damien Mugnai)
2007	ESAO Annual Meeting, Krems, Austria (Best Poster Award with

- Dr. Mustafa Cikirikcioglu)
Planimetric analysis of implanted electrospun PDS-PLA grafts in the rat systemic arterial circulation
- 2008 European Society for Cardio-Vascular Surgery, ESCVS (Young Vascular Surgeon Prize with Dr. Damiano Mugnai)
Experimental aortic replacement in a rat model with degradable synthetic vascular prosthesis
- 2008 ESAO Annual Meeting, Geneva (Wichtig Award with Dr. Benjamin Nottelet)
Factorial design optimization and in vivo feasibility of poly(ϵ -caprolactone)-micro- and nanofiber small diameter vascular grafts
- 2008 Turkish Society for Cardiovascular Surgery (1st Research Award with Dr. Erman Pektok)
Degradation and healing characteristics of small-diameter poly(ϵ -caprolactone) vascular grafts in the rat systemic arterial circulation
- 2009 Prix Denber-Pinard 2009: *Luminal coating of small diameter ePTFE vascular grafts with inorganic and organic materials: effects on neo-endothelialisation, intimal hyperplasia and patency* (For Thesis with: Dr. M. Cikirikcioglu, Faculté de Médecine 2009)
- 2009 Best Student Prize from the European Society of Biomaterials Lausanne, September (with Sarra de Valence):
Assessment of Paclitaxel in the prevention of vascular graft intimal hyperplasia formation.
- 2012 Wichtig Award from the European Society for Artificial Organs (ESAO), Rostock, September (with Sarra de Valence):
Long term performance of polycaprolactone vascular grafts in a rat abdominal aorta replacement model
- 2012 Prix Marie-Claude Marti, Geneva, October (Damiano Mugnai).
Experimental noninferiority trial of synthetic small-caliber biodegradable versus stable vascular grafts

AWARDS

- 2008 Trophy of Excellence in the Science of Artificial Organs from the International Federation for Artificial Organs for Scientific Accomplishments
- 2014 ESSR Lifetime Achievement Award for surgical research
- 2018 "Emil Buecherl Award" Lifetime Achievement Award from the European Society for Artificial Organs (ESAO)

RESEARCH GRANTS

- 1987-1989 Schweizerische Stiftung für Kardiologie
"Experimentelle Erprobung neuer kleinkalibriger Gefässprothesen"
- 1988-1989 Stiftung zur Förderung der wissenschaftlichen Forschung Universität Bern *"Erprobung von Herzabstoßungsreaktionen bei der Ratte mittels NMR"*
- 1992 Extrakredit der medizinischen Fakultät der Universität Bern
"Anschaffung eines hämodynamischen Monitoringsystems (Mikrokristalle) zur Erfassung hämodynamischer Veränderungen bei Herzabstoßungsreaktionen"
- 1992-1993 Schweiz. Herzstiftung *"Erfassung von MR-spektroskopischen Herzabstoßungsreaktionen"*
- 1993 Stiftung zur Förderung der wissenschaftlichen Forschung Universität Bern *"Erfassung von MR-spektroskopischer*

	<i>Herzabstossungsreaktion"</i>
1993-1996	Schweizerischer Nationalfonds (principal investigator) <i>"Detection of rejection by phosphorous magnetic resonance in experimental orthotopic heart transplantation"</i>
1994-1995	Schweizerischer Nationalfonds (principal investigator) <i>"Elektromikroskopische Untersuchung von transplantierten Herzen"</i>
1996-1999	Schweizerischer Nationalfonds (with T. Carrel) <i>"Functional, metabolic and morphologic assessment of transmyocardial laser revascularisation in hibernating myocardium"</i>
1997-1999	Schweizerische Herzstiftung (principal investigator): <i>"Intraoperative Transit-Time-Fluss- und Widerstands-messung in der koronaren Herzchirurgie"</i>
1999-2002	Schweizerischer Nationalfonds (principal investigator): <i>"Artificial bypass grafts and vascular gene therapy"</i>
1999-2002	Schweizerische Herzstiftung (principal investigator): <i>"Antiangiogenic gene therapy for prevention of intimal hyperplasia in synthetic vascular grafts"</i>
2007	SNF Sino-Swiss Cooperation Research Fellowship (with Prof. D. Kong, Taijin University, China)
2008-2012	SNF grant ' <i>Drug Eluting Cardiovascular Prostheses using Nanofibre-structured Biodegradable Polymers</i> '
2017	INNOGAP grant for development of an anti-thrombotic, tissue engineered vascular graft

RESEARCH INTERESTS

- Cardiovascular physiology and flow measurements
- Cardiovascular pharmacology and drug development
- Rejection and transplantation immunology (Hesperis-ECOT Diploma)
- Tissue engineering, gene therapy and angiogenesis
- Molecular and cellular biology (Postgraduate Course 1999)
- Graft development and new devices
- Hypothermia research and international registry
- Blood salvage, EPO and artificial blood
- Artificial organs and cardiovascular support
- Small and large animal physiology and chronic animal models

COLLABORATIONS (past and present):

- Harvard University: J. Folkman Group
- Stanford University: B. Reitz, MD, Robert C. Robbins, MD
- Commonwealth University of Virginia: G. Bowlin, MD
- Nankai University, Tianjin, CN: D. Kong
- University of Verona: A. Mazzucco, MD, G. Faggian MD
- University of Strasbourg (CNRS): G. Decher
- EPFL Lausanne/ETH Zürich: J.A. Hubbell, MD
- EPGL (Ecole de Pharmacie Genève-Lausanne): R. Gurny
- Several Departments of the Universities of Geneva
- Several Departments of the University of Bern: O.M. Hess, MD
- National Heart Institute, Kuala Lumpur, Malaysia: Jesant Dillon MD
- Poznan University of Medical Sciences, Poland: Michal Wojtalik, MD
- University Hospital of Vienna, Austria: Bruno Podesser, MD
- University Hospital of Tromso, Norway: Mads Gilbert, MD

EDITORIAL BOARD (past and present):

- ESAO Editorial Board of the International Journal of Artificial Organs
- Reviewer of 10+ peer-reviewed cardiovascular & tissue engineering journals
- Grant reviewer for the British Heart Foundation
- 2014 – 2017 Member of the External Advisory Board, TECAS-ITN
TECAS: Tissue Engineering Solutions for Cardiovascular Surgery, Marie Curie Initial Training Network (ITN)
- 2016 Springer Reference – Tissue Engineering Series

PROFESSIONAL AFFILIATIONS: (past and Emeritus)

Schweizerische Gesellschaft für Chirurgie
Schweizerische Gesellschaft für Thorax-, Herz- und Gefässchirurgie
Schweizerische Gesellschaft für Kardiologie
Schweizerische Gesellschaft für Gefässchirurgie
Schweizerische Gesellschaft für Intensivmedizin
Swiss Society for Research in Surgery
Swiss Cardiovascular Research & Training Network (SCRNTN)
Schweizerische Gesellschaft für Bergmedizin
Deutsche Gesellschaft für Chirurgie
Deutsche Gesellschaft für Thorax-, Herz und Gefässchirurgie
Sektion experimentelle Chirurgie der Deutschen Gesellschaft für Chirurgie
Oesterreichische Gesellschaft für Alpin- und Höhenmedizin
European Association for Cardio-Thoracic Surgery (EACTS)
European Society for Artificial Organs (ESAO) (**Governor/Past President 2006-2008**)
European Society for Surgical Research (ESSR) (**Past national delegate**)
European Society for Organ Transplantation (ESOT)
European Society of Magnetic Resonance in Biology and Medicine
European Society for Heart and Lung Transplantation (ESHLT)
International Society of Magnetic Resonance in Medicine (ISMRM)
International Society for Heart and Lung Transplantation (ISHLT)
International Society for Minimally Invasive Cardiac Surgery (**Past national delegate**)
Regmed.eu, Founding Member of the taskforce, European Federation Regenerative Medicine
Society of Thoracic Surgeons (STS)
Tissue Engineering & Regenerative Medicine International Society (TERMIS)
Union of Vascular Societies of Switzerland

Member of several national and international working groups (WG): (past and present)

- Swiss cardiovascular MR WG
- Swiss Anaemia WG
- Swiss intraoperative flow WG
- Swiss Accidental Hypothermia WG (AKOR SRK/IVR)
- Swiss Society of Cardiology Working Group on Heart failure
- Task force chairman on hypothermia, drowning WG (international)
- Scientific Board Member Network for Advancement of Transfusion Alternatives (NATA)
- Cardiovascular surgery WG, American Heart Association
- Cardiovascular surgery WG (Nr. 25), European Society of Cardiology
- Cardiovascular MR WG, International Society of Magnetic Resonance in Medicine
- Basic science WG, International Society for Heart and Lung Transplantation
- Board Member of the International Federation of Artificial Organs 2007-2009
- Member of the Jury (medical expert) for the Prix Neode, Neuchâtel 2008
- European Society for Artificial Organs (ESAO), Heart Support Working Group
- Jury Member of the Evaluation Committee, Doctoral Programme in
cardiovascular sciences, University of Verona, Italy, 2010
- Expert Member of the European CardioCell Expert Meeting 2014
- Member of the Jury (medical expert) for the Prix Neode, Neuchâtel 2015

- Tissue Engineering & Regenerative Medicine International Society (TERMIS):
President of Thematic Group on Vascular Tissue Engineering 2016

CONGRESS ORGANISATION

President and organiser, XXVII Congress of the European Society for Artificial Organs-ESAO, *Lausanne*, Switzerland, August 31 - September 2, 2000
Organiser, 2nd Swiss Experimental Surgery Symposium, *Geneva*
January 12-13, 2006
Organiser, ESAO Winter School, *Gstaad*, Switzerland
1-3 February, 2007
Co-organiser of the 1st International Symposium on Accidental Hypothermia, *Cortina d'Ampezzo*, December 14, 2007
Organiser, 4th Swiss Experimental Surgery Symposium, *Geneva*
January 10 –11, 2008
Organiser, ESAO Winter School, *Cortina d'Ampezzo*, Italy
6-8 March, 2008
President and organiser, XXXV Congress of the European Society for Artificial Organs-ESAO *Geneva*, 3 – 6 September 2008
Organiser, 2nd International Symposium on Accidental Hypothermia, *Zermatt*, September 25, 2009
Co-organiser, Symposium romand pour médecins praticiens confrontés à des patients atteints de pathologie valvulaire, Chateau de Coppet, October 2009
Organiser, 6th Swiss Experimental Surgery Symposium, *Geneva*
January, 2010
Co-Organiser of the ESAO Winter School, with Cornell University, New York, *Semering*, Austria, March, 2010
Honorary President of the 45th ESSR Annual Congress, *Geneva*, 9-12 June 2010
Organiser of the 8th Swiss Experimental Surgery Symposium, *Geneva*, January, 2012
Co-Organiser, ESAO Winter School/Verona University, *Catania*, Sicily, February, 2012
Co-Organiser, 1st Swiss Accidental Hypothermia Day, *Bern*, 27 November 2013
Co-Organiser, Cardiovascular Research Days, *Cortina*, Italy, 16-18 January 2014
Co-Organiser, ISMM/4TH Int'l Symposium on Hypothermia, *Bozen*, Italy, 25-31 May 2014
Co-organizer, 24th Congress World Society of Cardiothoracic Surgeons, *Geneva*, 6-10 September 2014
Co-Organiser, Swiss Hypothermia Day, Expert Meeting, *Bern*, 7 November 2015
Jury Member, Neode Prize 2015, (medical technologies) *Neuchatel*, December 2015
Co-Organiser, Swiss Experimental Surgery Symposium, *Geneva*, January, 2016
Co-Organiser, 5th International Symposium on Accidental Hypothermia, *Interlaken*, 2016
Honorary President, 3rd ISVTE Symposium, on Vascular Tissue Engineering: "Quo Vadis"?, *Colombus*, USA, June 2017
Co-Organiser, ISACB / ISVTE, Applied Cardiovascular Biology and Vascular Tissue Engineering, *Zürich* 2019

PUBLICATIONS/PRESENTATIONS (see separate publication list)

Over 150 publications of which more than 50 are first-author papers in peer reviewed journals with a total impact factor over 130.
One of the keystone papers is entitled "Outcome of Survivors of Accidental Deep Hypothermia and Circulatory Arrest Treated with Extracorporeal Blood Warming" and is published in the *New England Journal of Medicine* (*N Engl J Med* 337:1500-5,1997).
Editor of the Springer Reference Series book on 'Tissue Engineered Vascular Grafts' 2020
ESSR Internet Course on Surgical Research 2010: Responsible for Module II- Human and Experimental Research, No. 22-Animal models for cardiovascular research.
Web of Science® at January 2009: Published items = 153; Sum of times cited = 681; Average citations per item = 4.45; h-index = 15

Responsible tutor for more than 20 doctoral theses.
More than 100 invited lectures.

COURSES/ DIPLOMAS

Participation in several management, public health and statistic courses, as well as microsurgery training course at the University of Bern.
European College of Transplantation Diploma, Rome 1992 and Munich 1993.
Molecular and Cellular Biology Postgraduate Course at the University of Bern 1999.
Executive Management Program in Health Care Policy at Harvard University 2002.
Advanced Course "Science and Grant Writing", Research Section of the Swiss Surgical Society, 11-12 May 2005.

CONSULTING ACTIVITY

Advice for cardiovascular diseases and research with expertise on artificial organs, bio- and med-tech.

EXTRACURRICULAR INTERESTS

Competitive sports (participation at the academic ski world championship in 1968 in Innsbruck and sailing world championship in 1969 in Bermudas); holder of an active pilot and sailing license and member of several (non-)professional associations (ie. Harvard and Stanford Club: Board member); arts and performing arts amateur (opera and ballet); eager for visiting foreign countries and cultures.

LANGUAGES English, French, German, Italian (oral and written)