

## Stefanos Demertzis, MD

Cardiocentro Ticino  
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### Current position and academic degree

- Head of the Department of Cardiac Surgery at the Cardiocentro Ticino, Lugano, Switzerland (from February 2015)
- Titular Professor at the Università della Svizzera Italiana (USI) (from June 2018)
- Titular Professor at the University of Bern, Switzerland (from September 2011)

### Academic career

- Titular Professor - Università della Svizzera Italiana (USI) 2018
- Titular Professor - University of Bern, Switzerland 2011
- Faculty (“PD”) - University of Bern, Switzerland 2009
- Faculty (“PD”) – University of Saarland, Germany 1999
- Doctorate (“Dr. med.”) – University of Kiel, Germany 1991
- Graduation – University of Kiel, Germany 1988

### Specialty Training & Qualifications

- Harvard Medical School – Clinical Research Scholar 2017
- Good Clinical Practice certificate 2015
- Swiss Board - “Surgery of the Heart and Thoracic vessels” 2004
- EU (GR) board – “Thoracic Surgery” 2004
- Swiss Board - “General Surgery” 2002
- German Board - “Thoracic & Cardiovascular Surgery” 1996
- German Board - “General Surgery” 1994
- Training in General Surgery  
*Hannover Medical School, Germany (Prof. R. Pichlmayr)* 1988 – 1994
- Training in Thoracic & Cardiovascular Surgery  
*Hannover Medical School, Germany (Prof. H.G. Borst)* 1994 - 1996

### Education

- Management of social and health institutions  
University of Kaiserslautern, Germany (certificate) 2000 - 2001
- Medical School – University of Kiel, Germany 1981 - 1988

## Research

### Current Research

My current research focuses on three major topics:

1. Cardiovascular Engineering (lab)
2. Genetically triggered dilative thoracic aortic diseases and acute aortic dissection (clinical & epidemiological research)
3. Prevention of vein graft disease after CABG surgery

Ad 1.

- The main research project code-named “PulsingPump” focuses on the effects of pulsatility of cardiac assist devices (blood pumps) using a hybrid cardio-circulatory simulator (test bench) initially developed at the Swiss Federal Institute of Technology in Zurich (ETHZ) and further developed by my group. The research group consists of a Project Leader (PhD engineer), a postdoctoral researcher and an additional engineer.
- Development of a Full-HD head mounted video camera for surgeons (underway to serial industrial production) – **update**: the re-designed and final product is launched in the market: [www.cinvivo.com](http://www.cinvivo.com)
- Development of smart surgical devices for increasing safety in cardiac surgery (patent pending) – financed by the Swiss Federal Commission for Technology and Information (CTI)
- Deviation of cardiogenic emboli by means of flow modulation – an active project partially funded by the European Society of Cardiology in collaboration with the Department of Bioengineering of the University of Pavia.
- A concluded project, funded by a private foundation, dealt with the development of annular thrombi at connectors between various components of extracorporeal circuits used for short-term cardiac & pulmonary support (ECMO). A paper is in preparation.

Ad 2.

- Initial studies explored the incidence of genetically triggered dilative thoracic aortic disease among patients treated for acute aortic dissection. Being the only cardiac surgery center in the canton Ticino and considering its geographical characteristics, this work has a particular epidemiological value regarding the true incidence of those rare diseases in a “closed” geographical space. The project is active.

Ad 3.

- Principal Investigator of the European VEST Registry on 5-year-outcomes after CABG surgery using the VEST device for the prevention of vein graft disease.

### Recent Research

My recent previous research focused on following topics:

1. Cardiovascular Engineering – Flow visualization and simulation (lab)
2. Clinical application and performance of semi-automated vascular anastomotic devices in coronary bypass grafting surgery (clinical)
3. Evaluation of a new generation cutting / stapling device in general and thoracic surgery (animal study)

## Ad 1.

Aim of this published research was to explore flow phenomena taking place within the aorta when the heart is on partial support and two flow modalities are mixed: pulsatile flow from the ejecting heart and continuous flow from the extracorporeal pump. This research was performed at the ARTORG institute of the University of Bern.

## Ad 2.

I was Clinical Investigator of all four clinical studies performed in Switzerland (three multicenter studies, one single center study). The results are published and contributed in the clearance of both involved product families (Cardica's PAS-Port® and C-Port® devices) by the FDA.

## Ad 3.

I was Principal Investigator of a long series of animal studies conducted for proving safety and efficacy of a new generation cutting and stapling device in general and thoracic surgery. The results contributed to the clearance of the devices (Caridca's Microcutter® family) by the FDA and are published.

### Previous research

My previous research was mainly focused on clinical and experimental topics in the field of thoracic organ transplantation.

### Employment history

1999 – currently	Cardiocentro Ticino, Lugano, Switzerland	
		2015
		1999 – 2015
		Head – Department of Cardiac Surgery
		Senior Cardiac Surgeon
2008 – 2011 (part time)	University Hospital Bern (Inselspital), Switzerland	Senior Cardiac Surgeon
1995 - 1999	University Hospital Homburg - University of Saarland, Germany	Senior Cardiac Surgeon
1994 - 1995	Hannover Medical School, Hannover, Germany	Attending Surgeon
1988 - 1994	Hannover Medical School, Hannover, Germany	Resident

