

PUBLICATION LIST - Vandenberghe, Stijn

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Peer reviewed publications:

- 55 Direct visualization of carbon dioxide field flooding: Optical and concentration level comparison of diffusor effectiveness
Vandenberghe S, Iseli D, Demertzis S
J Thorac Cardiovasc Surg 2019: ePub 26 April 2019
- 54 Reversed Auxiliary Flow to Reduce Embolism Risk During TAVI: A Computational Simulation and Experimental Study
Conti M, Vandenberghe S, Marconi S, Ferrari E, Romarowski RM, Morganti S, Auricchio F, Demertzis S
Cardiovasc Eng Tech 2019; 10:124-35
- 53 Dexrazoxane Shows No Protective Effect in the Acute Phase of Reperfusion during Myocardial Infarction in Pigs.
Kamat P, Vandenberghe S, Christen S, Bongoni AK, Meier B, Rieben R, Katthab A
PLoS ONE 2016;11(12): e0168541.
- 52 Experimental Study of Micro-Scale Taylor Vortices within a Co-Axial Mixed-Flow Blood Pump
Shu F, Tian R, Vandenberghe S, Antaki JF
Artificial Organs 2015;40(11):1071-78
- 51 Classification of Unsteady Flow Patterns in a Rotodynamic Blood Pump: Introduction of Non-Dimensional Regime Map
Shu F, Vandenberghe S, Brackett J, Antaki JF
Cardiovascular Engineering and Technology 2015;6(3):230-41
- 50 Effects of Thoratec pulsatile ventricular assist device (PVAD) timing on the abdominal aortic wave intensity pattern
Jahren S, Amacher R, Weber A, Most H, Axiak-Flammer S, Traupe T, Stoller M, de Marchi S, Vandenberghe S
Am J Phys: Heart 2015;307(8):H1243-51

- 49 "The balloon plug concept" for tricuspid valve repair: ex vivo proof of concept
Bajona P, Salizzoni S, Zehr KJ, Vandenberghe S, Bruce CJ, Speziali G
Innovations (Phila). 2015;10(1):27-32
- 48 Numerical Optimal Control of Turbodynamic Ventricular Assist Devices
Amacher R, Asprion J, Ochsner G, Tevaearai H, Wilhelm MJ, Plass A, Amstutz A, Vandenberghe S, Schmid Daners M
Bioengineering 2014;1(1):22-46
- 47 Simulation of Dilated Heart Failure with Continuous Flow Circulatory Support
Wang Y, Loghmanpour N, Vandenberghe S, Ferreira A, Keller B, Gorcsan J, Antaki J
PLoS One 2014 Jan 17;9(1):e85234
- 46 A Physiological Controller for Turbodynamic Ventricular Assist Devices based on a Measurement of the Left Ventricular Volume
Ochsner G, Amacher R, Amstutz A, Plass A, , Tevaearai H, Vandenberghe S, Wilhelm MJ, Daners MS
Artif Organs. 2014;38(7):527-38
- 45 In-vitro and in-vivo imaging characteristics assessment of polymeric coils compared to standard platinum coils for the treatment of intracranial aneurysms
Mordasini P, Byrne JV, Krähenbühl AK, Vandenberghe S, Reinert M, Hoppe H, Gralla J
Am J Neuroradiol. 2013 Nov;34(11):2177-83
- 44 Reliability of lithium dilution cardiac output in anaesthetised sheep
Axiak Flammer S, Critchley LA, Weber A, Pirbodaghi T, Brinks H, Vandenberghe S
Br J Anaesth. 2013 Nov;111(5):833-9
- 43 A cardiovascular mathematical model of graded head-up tilt
Lim E, Chan GS, Dokos S, Ng SC, Latif LA, Vandenberghe S, Karunanithi M, Lovell NH.
PLoS One 2013 Oct 29;8(10):e7735
- 42 Analysis of Pressure Head-Flow Loops of Pulsatile Rotodynamic Blood Pumps
Jahren S, Ochsner G, Shu F, Amacher R, Antaki J, Vandenberghe S
Artif Organs. 2014 Apr;38(4):316-26
- 41 Effect of Pressure-Controlled Intermittent Coronary Sinus Occlusion (PICSO) on Myocardial Ischemia and Reperfusion in a Closed-Chest Porcine Model
Khattab A, Stieger S, Kamat P, Vandenberghe S, Bongoni A, Stone G, Seiler C, Meier B, Hess O, Rieben R
EuroIntervention. 2013 Jul;9(3):398-406
- 40 A Robust Reference Signal Generator for Synchronized Ventricular Assist Devices
Amacher R, Ochsner G, Ferreira A, Vandenberghe S, Schmid Daners M
IEEE Trans Biomed Eng. 2013 Aug;60(8):2174-83

- 39 Reply to the editor
Pirbodaghi T, Axiak S, Weber A, Vandenberghe S
J Thorac Cardiovasc Surg 2013;145:1145-1146
- 38 Asymmetric speed modulation of a rotary blood pump affects ventricular unloading.
Pirbodaghi T, Weber A, Axiak S, Carrel T, Vandenberghe S
EJCTS. 2013 Feb;43(2):383-388
- 37 A novel interface for hybrid mock circulations to evaluate ventricular assist devices.
Ochsner G, Amacher R, Amstutz A, Plass A, Daners MS, Tevæearai H, Vandenberghe S, Wilhelm MJ, Guzzella L.
IEEE Trans Biomed Eng. 2013 Feb;60(2):507-16
- 36 Energy Harvesting from the Beating Heart by a Mass Imbalance Oscillation Generator
Zurbuchen A, Pfenniger A, Stahel A, Stoeck CT, Vandenberghe S, Koch VM, Vogel R
Ann of Biomed Eng. 2013;41(1):131-41
- 35 Control of ventricular unloading using an electrocardiogram-synchronized Thoratec paracorporeal ventricular assist device.
Amacher R, Weber A, Brinks H, Axiak S, Ferreira A, Guzzella L, Carrel T, Antaki J, Vandenberghe S.
J Thorac Cardiovasc Surg. 2013 Sep;146(3):710-7
- 34 In-vitro hemodynamic evaluation of ventricular suction conditions of the Evaheart ventricular assist pump.
Ferreira A, Yu YC, Arnold D, Vandenberghe S, Grashow J, Kitano T, Borzelleca D, Antaki J
Int J Artif Organs 2012; 35(4):263-271
- 33 Ideal Site for Ventricular Anchoring of Artificial Chordae in Mitral Regurgitation
Weber A, Hurni S, Vandenberghe S, Wahl A, Vogel R, Carrel T
J Thor Cardiovasc Surg 2012; 143(4 Suppl):S78-81
- 32 Pulsatile Control of Rotary Blood Pumps: Does the Modulation Waveform Matter?
Pirbodaghi T, Axiak S, Weber A, Gempp T, Vandenberghe S
J Thor Cardiovasc Surg 2012;144(4):970-7
- 31 Simple, Economical, and Effective Portable Pediatric Mock Circulatory System
Vandenberghe S, Antaki JF, Arnold DK, Shu F
J Eng in Medicine 2011;225:648-656
- 30 In vitro Evaluation of Ventricular Cannulation for Rotodynamic Cardiac Assist Devices
Bachman T, Bahma J, Verkaik J, Vandenberghe S, Kormos R, Antaki J
Cardiovascular Engineering and Technology 2011;2(3):203-211
- 29 Effect of Pulsatility on the Mathematical Modeling of Rotary Blood Pumps

- Pirbodaghi T, Weber A, Carrel T, Vandenberghe S
Artif Organs 2011;35(8):825-832
- 28 Aortic flow patterns resulting from right axillary artery cannulation
Demertzis S, Tevæearai H, Carrel T, Vandenberghe S
Interact CardioVasc Thorac Surg 2011;12:973-977
- 27 Biocompatibility Assessment of the First Generation PediaFlow™ Pediatric Ventricular Assist Device
Johnson C, Vandenberghe S, Daly A, Woolley J, Snyder S, Verkaik J, Ye SH, Borovetz H, Antaki J, Wearden P, Kameneva M, Wagner W
Artif Organs 2011;35(1):9-21
- 26 Validation of abdominal aortic aneurysm dynamics: A comparative analysis of PIV, CFD, and FSI.
Scotti C, Shu F, Vandenberghe S, Seong J, Antaki J, Lieber B, Finol E
Proceedings of the ASME Summer Bioengineering Conference 2009
DOI: 10.1115/SBC2009-206606
- 25 Pulsatile in vitro simulation of the pediatric univentricular circulation for evaluation of cardiopulmonary assist scenarios
Dur O, Lara M, Arnold D, Vandenberghe S, Keller B, Pekkan K
Artif Organs 2009;33(11):967-976
- 24 The Importance Of dQ/dt On The Flow Field In A Turbodynamic Pump With Pulsatile Flow
Shu F, Vandenberghe S, Antaki JF
Artif Organs 2009;33(9):757-762
- 23 Transapical, Off-Pump, Removal of the Native Aortic Valve. A large animal study
Salizzoni S, Bajona P, Zehr KJ, Anderson WD, Vandenberghe S, Speziali G
J Thorac Cardiovasc Surg 2009;138(2):468-73
- 22 In Vitro Testing of a Temporary Catheter-based Aortic "Parachute" Valve
Vandenberghe S, Salizzoni S, Bajona P, Zehr KJ, Speziali G
ASAIO J 2008; 54:574-577.
- 21 Modeling ventricular function during cardiac assist: does time-varying elastance work?
Vandenberghe S, Segers P, Steendijk P, Meyns B, Dion RA, Antaki JF, Verdonck P
ASAIO J 2006; 52(1):4-8.
- 20 The PediaFlow™ Pediatric Ventricular Assist Device
Wearden P, Morell V, Keller B, Webber S, Borovetz H, Badylak S, Boston R, Kormos R, Kameneva M, Simaan M, Snyder T, Tsukui H, Wagner W, Antaki J, Diao C, Vandenberghe S, Gardiner J, Li C, Noh D, Paden D, Paden B, Wu J, Bearson G, Jacobs G, Kirk J, Khanwilkar P, Long J, Miles S, Hawkins J, Kouretas P, Shaddy R
Semin Thorac Cardiovasc Surg Pediatr Card Surg Annu. 2006; 92-8.

- 19 Towards the Development of a Pediatric Ventricular Assist Device
Borovetz H, Badylak S, Boston JR, Johnson C, Kormos R, Kameneva M, Simaan M, Snyder T, Tsukui H, Wagner W, Woolley J, Antaki J, Diao C, Vandenberghe S, Keller B, Morell V, Wearden P, Webber S, Gardiner J, Li C, Paden D, Paden B, Snyder S, Wu J, G Bearnson, Hawkins J, Jacobs G, Kirk J, Khanwilkar P, Kouretas P, Long J, Shaddy R
Cell Transplantation 2006; 15(S1):S69–S74
- 18 Hemodynamic modes of ventricular assist with a rotary blood pump: Continuous, pulsatile, and failure.
Vandenberghe S, Segers P, Antaki J, Meyns B, Verdonck P
ASAIO J 2005; 51(6):711-8.
- 17 Accuracy of 4 different algorithms for the analysis of tomographic radionuclide ventriculography using a physical, dynamic 4-chamber cardiac phantom
De Bondt P, Claessens T, Rys B, De Winter O, Vandenberghe S, Segers P, Verdonck P, Dierckx RA
J Nucl Med 2005; 46:165-171
- 16 The impact of pump speed and inlet cannulation site on left ventricular unloading with a rotary blood pump
Vandenberghe S, Nishida T, Segers P, Meyns B, Verdonck P
Artif Organs 2004; 28(7):660-667
- 15 In vitro assessment of the Unloading and perfusion capacities of the PUCA II and the IABP
Vandenberghe S, Segers P, Josemans H, Van Loon JP, Rakhorst G, Verdonck P
Perfusion journal 2004; 19:25-32
- 14 Accuracy of commercially available processing algorithms for planar radionuclide ventriculography using data for a dynamic left ventricular phantom
De Bondt P, De Winter O, Vandenberghe S, Vandevijver F, Segers P, Bleukx A, Ham H, Verdonck P, Dierckx RA
Nucl Med Commun 2004; 25:1197-1202
- 13 Model dependence of gated blood pool SPECT ventricular function measurements
Nichols K, Humayun N, De Bondt P, Vandenberghe S, Akinboboye OO, Bergmann SR
J Nucl Cardiol 2004; 11:282-92
- 12 In vitro evaluation of the PUCA II pump
Vandenberghe S, Van Loon JP, Segers P, Rakhorst G, Verdonck P
Int J Artif Org 2003 ; 26(8) :743-752
- 11 Unloading effect of a rotary blood pump assessed by mathematical modeling
Vandenberghe S, Segers P, Meyns B, Verdonck P
Artif Organs 2003; 27(12):1094-1101

- 10 Hydraulic bench testing of the TruCATH/TruCCOM continuous cardiac output monitor
Segers P, Vandenberghe S, De Cruyenaere J, Poelaert J, Wouters P, Colardyn F, Verdonck P
Cardiovascular Engineering 2003; 3(3):93-102
- 9 Validation of planar and tomographic radionuclide ventriculography by a dynamic ventricular phantom
De Bondt P, Vandenberghe S, De Mey S, Segers P, De Winter O, De Sutter J, Van de Wiele C, Verdonck P, Dierckx R
Nucl Med Comm 2003; 24(7):771-777
- 8 Validation of Gated Blood-Pool SPECT Cardiac Measurements Tested Using a Biventricular Dynamic Physical Phantom
De Bondt P, Nichols K, Vandenberghe S, Segers P, De Winter O, Van de Wiele C, Verdonck P, Shazad A, Shoyeb A, De Sutter J
J Nucl Med 2003; 44:967-972
- 7 Mock loop testing of On-X® prosthetic mitral valve with Doppler echocardiography Verdonck P, Dumont K, Vandenberghe S, Segers P, Van Nooten G
Artif Organs 2002; 26(10):872-878
- 6 Design of a new pulsatile bioreactor for tissue engineered heart valves formation
Dumont K, Yperman J, Verbeken E, Segers P, Meuris B, Vandenberghe S, Flameng W, Verdonck P.
Artif Organs 2002; 26(8) :710-714
- 5 Omnicarbon® 21 mm Aortic Valve Prosthesis In Vitro Hydrodynamic and Echo-Doppler Study
Dumont K, Segers P, Vandenberghe S, Van Nooten G, Verdonck P
Int J Artif Organs 2002; 25(8) :783-790
- 4 Effect of rotary blood pump failure on LV energetics assessed by mathematical modeling
Vandenberghe S, Segers P, Meyns B, Verdonck P
Artif Organs 2002; 26(12):1032-1039
- 3 Characterisation of cardiac assist devices.
Vandenberghe S, Segers P, De Wachter D, Verdonck P.
Technology and Health Care; 9(1,2):70-72
- 2 Development of a pulsatile bioreactor for the in vitro formation of tissue engineered heart valves
Dumont K, Segers P, Vandenberghe S, Meuris B, Yperman J, Flameng W, Verdonck P
Technology and Health Care; 9(1,2):66-68
- 1 Hydrodynamic characterisation of ventricular assist devices
Vandenberghe S, Segers P, Meyns B, Verdonck P
Int J Artif Organs 2001; 24(7):470-477

Book Chapters:

Mathematical Modeling of Ventricular Assist Devices

Vandenberghe S, Segers P, Verdonck P

In: Cardiac Perfusion and Pumping Engineering. Ghista, Ng, eds.

Chapter 15: 419-476

Abstracts:

2019

Preliminary design, theoretical analysis and experimental evaluation of a right ventricular assist device

De Gaetano F, Boccon D, Covelli S, Vandenberghe S, Costantino ML, Demertzis S
*25th Congress of the European Society of Biomechanics,
 Vienna, July 7-10, 2019*

Carbon Dioxide Field Flooding: Seeing (and Measuring) Is Understanding

Demertzis S, Vandenberghe S
*ISMICS annual scientific meeting
 New York, May 29 – June 1, 2019*

Initial phase of an RVAD design project

Vandenberghe S, de Gaetano F, Boccon D, Covelli S, Constantino ML, Demertzis S
*GRC Assisted Circulation Conference 2019
 Casteldefels, June 14-19, 2019*

Progettazione preliminare, analisi teorica e validazione sperimentale di un dispositivo per assistenza ventricolare destra.

Boccon D, Covelli S, De Gaetano F, Vandenberghe S, Costantino ML, Demertzis S
*9a Giornata della ricerca scientifica in biomedicina nella Svizzera Italiana
 Lugano, March 15, 2019*

2017

Assessment of intraprocedural embolization in TAVI: an in vitro approach.

Conti M, Vandenberghe S, Marconi S, Ferrari E, Demertzis S, Auricchio F
*31st Annual Meeting of European Association of Cardio-Thoracic Surgery (EACTS)
 Vienna, October 7-11, 2017*

Hemodynamic shield for endovascular aortic embolization: in vitro and in silico analysis.

Conti M, Vandenberghe S, Romarowski R, Morganti S, Faggiano E, Demertzis S, Auricchio F
*IACM Finite Elements in Flow (FEF) Problems Conference.
 Rome, April 5-7, 2017*

Design of embolic protection during Transcatheter Aortic Valve Implant (TAVI): integration of in-vitro and in-silico analysis.

Conti M, Vandenberghe S, Romarowski R, Marconi S, Morganti S, Ferrari E, Demertzis S, Auricchio F
*3rd International Conference on Biomedical Technology
 Hannover, November 6-8, 2017*

Visualization of Carbon Dioxide Field Flooding in a Cardiac Surgery Setting
 Iseli D, Vandenberghe S, Demertzis S
*52nd Congress of the European Society for Surgical Research
 Amsterdam, June 14–17, 2017*

2015

Pressure and Velocity patterns in the abdominal aorta: PVAD and P-RBP
 Vandenberghe S, Amacher R, Jahren SE, Most H, Weber A, deMarchi S
*GRC Assisted Circulation Conference 2015
 Lucca, June 14-19, 2015*

Blood lactate levels after Total Artificial Heart implantation in a bovine model
 Coulthard B, Timms D, Vandenberghe S, Nestler F, Cohn W, Frazier OH
*2nd UBC Okaganan Interdisciplinary Health Conference
 Kelowna, March 12, 2015*

Only neochordoplasty achieves physiological trans-valvular pressure gradients after repair of acute posterior leaflet prolapse in porcine mitral valves.
 Hurni S, Jahren S, Vandenberghe S, Carrel T, Obrist D, Weber A
*AATS Mitral Conclave 2015
 New York, April 23-24, 2015*

Neochordae suturing at the papillary muscle: with or without pledgets?
 Hurni S, Wuethrich O, Vandenberghe S, Guggisberg S, Carrel T, Weber A
*AATS Mitral Conclave 2015
 New York, April 23-24, 2015*

2014

A batteryless cardiac pacemaker powered by cardiac motion
 Zurbuchen A, Haerberlin A, Schaerer J, Wagner J, Pfenniger A, Vandenberghe S, Huber C, Fuhrer J, Vogel R
*European Society of Cardiology annual congress
 Barcelona, August 30 – September 3, 2014*

A Batteryless Cardiac Pacemaker Powered By Cardiac Motion
 Zurbuchen A, Haerberlin A, Scharer J, Wagner J, Pfenniger A, Vandenberghe S, Huber C, Fuhrer J, Vogel R
*SGK Conference 2014-01-27
 Interlaken, June 11-13, 2014*

Synchronization of a Thoratec PVADTM affects abdominal aortic pressure waves
 Vandenberghe S, Jahren SE, Stoller M, Weber A, Amacher R, Most H, Traupe T, Axiak-Flammer S, deMarchi S
SGK Conference 2014-01-27

Interlaken, June 11-13, 2014

2013

Tensile Strength of PTFE Figure of Eight sutures at the papillary muscle for chordal replacement in mitral valve repair.

Wuethrich O, Guggisberg S, Maechler A, Vandenberghe S, Weber A, Carrel T
AATS Mitral Conclave 2013
New York, May 2-3, 2013

2012

Effect of Rotary Blood Pump pulse characteristics on cardiac workload

Pirbodaghi T, Weber A, Carrel T, Axiak S, Vandenberghe S
 ASAIO Conference 2012
San Francisco, June 14-16, 2012
ASAIO J 2012;58(7):26

Left Ventricular Stroke Work Control Using a Pulsatile Ventricular Assist Device

Amacher R, Axiak S, Weber A, Brinks H, Vandenberghe S
 ASAIO Conference 2012
San Francisco, June 14-16, 2012
ASAIO J 2012;58(7):23

Near-real time pulmonary shunt measurement with Multiple Inert Gas Elimination Technique (MIGET) by Micropore Membrane Inlet Mass Spectrometry (MMIMS) in a porcine lavage lung model

Varadarajan B., Gerber D., Eberle B., Vandenberghe S., Vogt A.
 Euroanesthesia 2012

Wave travel in the thoraco-abdominal aorta with ECG synchronized Thoratec PVAD

Vandenberghe S, Amacher R, Brinks H, Stoller M, Axiak S, Weber A, deMarchi S
 ASAIO Conference 2012
San Francisco, June 14-16, 2012
ASAIO J 2012;58(7):40

2011

Development and characterization of a linear hydraulic resistor for baroreflex simulation

Toy F, Weidner S, Vandenberghe S
 DKF Research Day
Bern, November 2, 2011

Pulsatile Control of Rotary Blood Pumps: Does the Modulation Waveform Matter?

Pirbodaghi T, Weber A, Brinks H, Axiak S, Vandenberghe S

*DKF Research Day
Bern, November 2, 2011*

Automated Pneumatic Driver for Ventricular Assist Device (VADs)
Asgari S, Weidner S, Vandenberghe S
*DKF Research Day
Bern, November 2, 2011*

In vitro flow simulation of perfusion through the right axillary artery for partial cardiac assistance:
technical limitations and lessons learnt.
Demertzis S, Weber A, Basciani R, Casso G, Tevaearai H, Carrel T, Vandenberghe S
*DKF Research Day
Bern, November 2, 2011*

Testing Dexrazoxane as an Attenuator of Ischemia/Reperfusion Injury in a Closed-Chest Porcine
Model
P Kamat, S Vandenberghe, C Stephan, O Beslac, D Mettler, B Meier, O Hess, R Rieben, A
Khattab
*DKF Research Day
Bern, November 2, 2011*

Effect of Pressure-Controlled Intermittent Coronary Sinus Occlusion (PICSO) on Myocardial
Ischemia and Reperfusion in a Closed-Chest Porcine Model
A Khattab, S Stieger, P Kamat, S Vandenberghe, C Seiler, B Meier, O Hess, R Rieben
*DKF Research Day
Bern, November 2, 2011*

Left ventricular stroke work control using an ECG-synchronized pulsatile VAD
R Amacher, A Weber, S Axiak, S Vandenberghe
*GRC Assisted Circulation
Waterville Valley, June 12-17, 2011*

Hemodynamic and neurologic properties of volume controlled perfusion
HJ Jenni, D Gerber, S Trachsel, E Roost, T Carrel, S Vandenberghe
*GRC Assisted Circulation
Waterville Valley, June 12-17, 2011*

Pulsatile Control of Rotary Blood Pumps: Does the Modulation Waveform Matter?
T Pirbodaghi, A Weber, S Axiak, S Vandenberghe
*GRC Assisted Circulation
Waterville Valley, June 12-17, 2011*

Pulsatile Control of Rotary Blood Pumps: Does the Modulation Waveform Matter?
T. Pirbodaghi, A. Weber, H. Brinks, S. Axiak, S. Vandenberghe
*ASAIO
Washington, June 10-12, 2011
ASAIO J 2011;57(2):91*

Volume Controlled Perfusion – Physiology and Simulation of a MECC assist
 Lauber S, Vandenberghe S, Czerny M, Jenni HJ, Trachsel S,
J Cardiothorac Vasc Anesth 2011;25(3):S41-42
 EACTA
 Vienna, June 1-4, 2011

The ideal anchoring point for neochordae
 A Weber, S Hurni, S Vandenberghe, A Wahl, R Vogel, M Keller, T Carrel
AATS Mitral Conclave
 New York, May 5-6, 2011

Comparison of lithium dilution cardiac output with ultrasonic pulmonary artery flow in sheep
 undergoing cardiac surgery
 SM Axiak Flammer, S Vandenberghe, H Brinks, T Pirbodaghi, A Weber, C Spadavecchia
Association Veterinary Anesthesia
 Bari, Italy, April 13-15, 2011
Veterinary Anesthesia and Analgesia 2011;38:26

In vitro simulation of volume controlled perfusion – Physiology and Simulation of a MECC assist
 Sandro Lauber, Hansjörg Jenni, Martin Czerny, Stijn Vandenberghe, Sebastien Trachsel
Swiss Experimental Surgery Symposium
 Fribourg, January 21-22, 2011

In vitro and in vivo characterization of the Levitronix CentriMag™ Rotary Blood Pump
 Tohid Pirbodaghi, Alberto Weber, Shannon Axiak, Thierry Carrel, Stijn Vandenberghe
Swiss Experimental Surgery Symposium
 Fribourg, January 21-22, 2011

2010

Blood vessel reproduction for flow simulators
 Alycia Klein, SaschaWeidner, Stijn Vandenberghe
DKF Research Conference
 Bern, November 3rd, 2010

Flow Distribution In The Aorta With Cardiac Assist Via The Right Subclavian Artery
 S Demertzis, H Tevaeearai, T Carrel, S Vandenberghe
DKF Research Conference
 Bern, November 3rd, 2010

In vitro and in vivo evaluation of a mathematical model for rotary blood pumps
 Tohid Pirbodaghi, Thomas Gempp, Alberto Weber, Shannon Axiak, Stijn Vandenberghe
DKF Research Conference
 Bern, November 3rd, 2010

Aortic flow patterns resulting from right axillary cannulation

Stefanos Demertzis, Hendrik Tevaearai, Thierry Carrel, Stijn Vandenberghe
Interact CardioVasc Thorac Surg 2010;11:S79-S80
 24th Conference of the European Association for Cardio-thoracic surgery
 Geneva, September 2010

In vitro and in vivo characterization of the Levitronix CentriMag™ Rotary Blood Pump
 T Pirbodaghi, A Weber, S Vandenberghe
 18th Conference of the International Society for Rotary Blood Pumps
 Abstract book p. 48
 Berlin, Oktober 2010

Pulsing the Levitronix CentriMag™ for accurate control of heart-device interaction
 A Weber, A Kadner, T Pirbodaghi, S Trachsel, T Carrel, S Demertzis, S Vandenberghe
 Annual Congress of the Schweizerische Gesellschaft für Kardiologie
 Abstract book p.135
 St. Gallen, June 9-11, 2010

In-vitro hemodynamic evaluation of ventricular suction conditions of the EVAheart assist pump
 Antonio Ferreira, Yih-Choung Yu, Stijn Vandenberghe, Dorian Arnold, Jonathan Grashow,
 Tomoya Kitano, James F. Antaki
 56th Conference of the American Society for Internal Artificial Organs
 Baltimore, May 27-29, 2010
 ASAIO J 2010; 56(2): 132

Pulsing a Left Ventricular Assist Device can control ventricular load
 S. Vandenberghe, T. Pirbodaghi, A. Kadner, H. Brinks, S. Axiak, S. Trachsel, T. Carrel, S.
 Demertzis, A. Weber
 DKF Research Conference
 Bern, November 3rd, 2010

Aortic washout and shear caused by right axillary cannulation (-withdrawn-)
 S. Vandenberghe, H. Tevaearai, T. Carrel, S. Demertzis
Int J Artif Organs 2010; 33 (7): 471
 37th ESAO conference
 Skopje, September 8-11, 2010

Pulsing Rotary Blood Pump as a means to control myocardial load in sheep
 S. Vandenberghe, T. Pirbodaghi, S. Axiak, H. Brinks, A. Kadner, T. Carrel, A. Weber
 18th Conference of the International Society for Rotary Blood Pumps
 Abstract book p. 30
 Berlin, October 14-16, 2010

Myocardial load control with a synchronized pulsing rotary blood pump in goats
 S. Vandenberghe, T. Pirbodaghi, A. Kadner, A. Weber, S. Trachsel, S. Demertzis
British Journal of Surgery 2010; 97(S4): S7-S8
 Congress of the European Society for Surgical Research
 Geneva, June 9-11, 2010

2009

Flow Visualization of Pediaflow™ Pediatric VAD Under Synchronous Pulsatile Conditions

F Shu, S Vandenberghe, J Antaki

BMES Annual Fall Meeting

Pittsburgh, October 8-10, 2009

Validation of Abdominal Aortic Aneurysm Dynamics: A Comparative Analysis of PIV, CFD, and FSI

C. Scotti, F. Shu, S. Vandenberghe, J. Seong, J. Antaki, B. Lieber, E. Finol

ASME Summer bioengineering conference

Lake Tahoe, June 17-21, 2009

VAD strategies for Fontan circulation: in vitro evaluation.

O Dur, M Lara, S Vandenberghe, B Keller, D Arnold, K Pekkan

Int J Artif Org 2009;32(7):425

36th ESAO conference

Compiègne, September 2-5, 2009

In vivo Evaluation of the PediaFlow™ Pediatric Ventricular Assist Device.

P Wearden, T Maul, E Kocyildirim, A Daly, C Johnson, M Kameneva, W Wagner, H Borovetz and the PediaFlow Consortium

5th International Conference on Pediatric Mechanical Circulatory Support Systems and Pediatric Cardiopulmonary Perfusion.

Dallas, May 28-30, 2009

In Vivo Evaluation of the PediaFlow™ Pediatric Ventricular Assist Device

T Maul, P Wearden, E Kocyildirim, A Daly, C Johnson, J Woolley, S Olia, S Snyder, J Verkaik, D Paden, F Shu, J Antaki, M Kameneva, W Wagner, H Borovetz and the PediaFlow Consortium

BMES Annual Fall Meeting

Pittsburgh, October 8-10, 2009

In Vivo Evaluation of the PediaFlow™ Pediatric Ventricular Assist Device

P Wearden, P Khanwilkar, E Kocyildirim, T Maul, C Johnson, A Daly, S Olia, M Kameneva, W Wagner, H Borovetz and the PediaFlow Consortium

Artif Organs 2009;33(5):A57

International Society of Rotary Blood Pumps

Singapore, October 1-3, 2009

Miniaturization of the PediaFlow(tm) Pediatric Ventricular Assist Device

T Maul and the PediaFlow Consortium

Artif Organs 2009;33(5):A1

International Society of Rotary Blood Pumps

Singapore, October 1-3, 2009

Pre-Clinical Assessment of the PediaFlow™ Pediatric VAD: In Vivo Results

P Wearden, T Maul, E Kocylidirim, A Daly, C Johnson, S Olia, J Woolley, B Paden, D Paden, M Ricci, S Snyder, J Verkaik, J Antaki, F Shu, G Bearnson, J Kirk, P Khanwilkar, M Kameneva, W Wagner, H Borovetz and the PediaFlow Consortium
*Gordon Research Conference
 Waterville Valley, September, 2009*

Development of the PediaFlow™, a Fully Implantable Magnetically Levitated Pediatric Ventricular Assist Device (VAD).

T Maul, P Wearden, E Kocylidirim, A Daly, C Johnson, J Woolley, B Paden, D Paden, S Snyder, J Verkaik, J Antaki, F Shu, G Bearnson, J Kirk, P Khanwilkar, M Kameneva, W Wagner, H Borovetz and the PediaFlow Consortium
*33rd Annual Meeting of the Midwest Pediatric Cardiology Society.
 Pittsburgh, 2009.*

Volume Controlled Perfusion: assessment and simulation of physiology under MECC assist
 S Vandenberghe, HJ Jenni, S Trachsel, A Kadner, T Carrel
*Gordon Research Conference
 Waterville Valley, September, 2009*

Mechanical Cardiac Assist research in Switzerland – current status and future plans
 S Vandenberghe
*36th ESAO conference
 Compiègne, September 2-5, 2009*

2008

Comprehensive classification of flow patterns in a centrifugal blood pump under pulsatile conditions
 F Shu, S Vandenberghe, P Miller, J Antaki
*16th ISRBP Conference
 Houston, October 2-4, 2008
 Artif Organs 2009;33(6):A89*

In-vivo evaluation of conformal pediatric ventricular cannula
 A Drummond, J Verkaik, S Vandenberghe, P Wearden, JF Antaki
*ASAIO J 2008;54(2):9A
 54th ASAIO Conference
 San Francisco, June 19-21, 2008*

Pulsatile flow visualization of PediaFlow™ pediatric VAD
 F Shu, S Vandenberghe, J Wu, H Borovetz, J Antaki
*ASAIO J 2008;54(2):55A
 54th ASAIO Conference
 San Francisco, June 19-21, 2008*

Flow visualization study of Worldheart Levacor™ VAD under synchronous pulsatile conditions

F Shu, S Vandenberghe, H Borovetz, J Antaki
ASAIO J 2008;54(2):44A
54th ASAIO Conference
San Francisco, June 19-21, 2008

In Vitro and In Vivo Testing of the PediaFlow™ Pediatric VAD
 Peter Wearden and the PediaFlow Consortium
ASAIO J 2008;54(2):41A
54th ASAIO Conference
San Francisco, June 19-21, 2008

Towards the Development of the 2nd Generation (GEN2) PediaFlow™ Pediatric VAD
 Josiah Verkaik and the PediaFlow Consortium
ASAIO J 2008;54(2):33A
54th ASAIO Conference
San Francisco, June 19-21, 2008

PediaFlow™ VAD
 Peter Wearden and the PediaFlow Consortium
*4th International Conference on Pediatric Mechanical Circulatory Systems & Pediatric
 Cardiopulmonary Perfusion*
Portland, May 2008

2007

Development and Performance of a Feedback Controller for a Rotary Blood Pump Based on
 Pump Flow Signal
 M Simaan¹, J Antaki, S Vandenberghe
15th ISRBP Congress
Sydney, November 2-4, 2007

The PediaFlow™ VAD, a maglev rotary blood pump for neonates and infants: from concept to
 early animal trials with a first prototype
 PS Khanwilkar, JF Antaki, S Vandenberghe, BE Paden, P Wearden, DB Paden, GB Bearson, D
 Arnold, T Bachman, A Drummond, C Johnson, M Kameneva, J Kirk, M Oberdier, M Ricci, F Shu,
 S Snyder, J Verkaik, W Wagner, J Woolley, P Miller, P Kouretas, HS Borovetz
Artif Organs 2007;31(10):A68
JSAO and IFAO joint Congress 2007
Osaka, October 28-31st, 2007

Development And Initial Evaluation Of The Pediaflow™ Ventricular Assist Device
 Woolley J, J. Wu, J.F. Antaki, H.S. Borovetz, J. R. Boston, C. Diao, J.A. Hawkins, J. Gardiner, G.
 Jacobs, M.V. Kameneva, B.B. Keller, P. Khanwilkar, J. Kirk, R. L. Kormos, J. W. Long, C.M. Li, S.
 Miles, V. Morell, E. Prem, B.E. Paden, D. Paden, R. E. Shaddy, M. A. Simaan, T. A. Snyder, H.
 Tsukui, S. Vandenberghe, W. R. Wagner, and S. A. Webber
Gordon Research Conference
Bis Sky, August 19-24, 2007

Development of the PediaFlow™ VAD for Infants and Small Children
 Peter Wearden and the PediaFlow Consortium
ASAIO J 2007;53(2):38A
53rd ASAIO Conference
Chicago, June 7-9, 2007

Development of the PediaFlow™ Ventricular Assist Device for Infants and Small Children
 Harvey Borovetz and the PediaFlow Consortium
*3rd International Conference on Pediatric Mechanical Circulatory Systems & Pediatric
 Cardiopulmonary Perfusion*
Hershey, May 22-24, 2007

Initial evaluation of the PediaFlow™ pediatric VAD
 S Vandenberghe, J Antaki, D Arnold, T Bachman, G Bearnson, A Drummond, C Johnson, M
 Kameneva, B Keller, P Khanwilkar, J Kirk, R Kormos, V Morell, M Oberdier, B Paden, D Paden,
 M Ricci, F Shu, S Snyder, J Verkaik, W Wagner, P Wearden, S Webber, J Woolley, H Borovetz
15th ISRBP Congress
Sydney, November 2-4, 2007

Fundamental research in support of pediatric VAD development
 S Vandenberghe, J Antaki, D Arnold, T Bachman, J Bahma, A Drummond, C Johnson, M
 Kameneva, NJ Kim, M Oberdier, F Shu, T Snyder, W Wagner, J Woolley, SH Ye, R Zhao, H
 Borovetz
15th ISRBP Congress
Sydney, November 2-4, 2007

Initial Evaluation of the PediaFlow™ Pediatric VAD
 S Vandenberghe, J Antaki, D Arnold, T Bachman, A Drummond, C Johnson, M Kameneva, B
 Keller, V Morell, M Oberdier, B Paden, D Paden, M Ricci F Shu, S Snyder, J Verkaik, W Wagner,
 P Wearden, S Webber, J Woolley, H Borovetz
Artif Organs, 2007;31(10):A35
JSAO and IFAO joint Congress 2007
Osaka, October 28-31st, 2007

Identifying and facilitating ventricular recovery on mechanical support
 S Vandenberghe, J Antaki, R Kormos, J Gorcsan
Gordon Research Conference
Bis Sky, August 19-24, 2007

2006

Pathway to the first generation PediaFlow™ VAD
 S Vandenberghe, J Antaki, D Arnold, T Bachman, G Bearnson, H Borovetz, J Gardiner, J
 Donachy Jr., A Drummond, C Johnson, M Kameneva, B Keller, J Kirk, R Kormos, T Maher, V
 Morell, B Paden, D Paden, M Ricci, F Shu, T Snyder, S Snyder, W Wagner, J Verkaik, P
 Wearden, S Weber, J Woolley, J Wu
Artif Organs 2006;30(11):A29

14th ISRBP Congress
Leuven, August 31-September 2, 2006

Electrical, hydrodynamic, and optical evaluation of pulsatile RBP application
 Vandenberghe S, Shu F, Paden B, Antaki J
Artif Organs 2006;30(11):A44
14th ISRBP Congress
Leuven, August 31-September 2, 2006

Patient-specific Modeling of Rotary Blood Pump Interactions in Pediatric Congenital Heart Defects
 Arnold D, Vandenberghe S, Wu J, Kreutzer J, DeGroff C, Antaki J
Artif Organs 2006;30(11):A38
14th ISRBP congress
Leuven, August 31-September 2, 2006

Optimization, Validation, and Re-Optimization of Pediaflow Maglev Turbo-Vad
 Antaki, J; Arnold, D; Bachman, T; Bearnson, G; Borovetz, H; Gardiner, J; Donachy, J;
 Drummond, A; Johnson, C; Kameneva, M; Keller, B; Kirk, J; Kormos, R; Maher, T; Morell, V;
 Paden, B; Paden, D; Ricci, M; Shu, F; Snyder, T; Shaun, S; Vandenberghe, S; Wagner, W;
 Verkaik, J; Wearden, P; Webber, S; Wooley, J; Wu, J
ASAIO J 2006;52(2):56A
52nd ASAIO Conference
Chicago, June 8-10, 2006

2005

Progress with Pediaflow Maglev Pump for Infants and Small Children: Form to Function
 J. Wu, J.F. Antaki, H.S. Borovetz, J. R. Boston, C. Diao, J.A. Hawkins, J. Gardiner, G. Jacobs,
 M.V. Kameneva, B.B. Keller, P. Khanwilkar, J. Kirk, R. L. Kormos, J. W. Long, C.M. Li, S. Miles,
 V. Morell, E. Prem, B.E. Paden, D. Paden, R. E. Shaddy, M. A. Simaan, T. A. Snyder, H. Tsukui,
 S. Vandenberghe, W. R. Wagner, and S. A. Webber
ASAIO J 2005;51(2):32A
51st ASAIO Conference
Washington, DC, June 7-9, 2005.

The Pediatric ventricular Assist Device (Pediaflow)
 H. Borovetz, S. Badylak, J.R. Boston, R. Kormos, M. Kameneva, M. A. Simaan, T. Snyder, H.
 Tsukui, W. Wagner, J.F. Antaki, C. Diao, S. Vandenberghe, B. Keller, V. Morell, S. Weber, J.
 Gardiner, C.M. Li, D. Paden, B. Paden, J. Wu, G. Bearnson, J. Hawkins, G. Jacobs, J. Kirk, P.
 Khanwilkar, J. Long, S. Miles, and R. Shaddy
*1st International Conference on Pediatric Mechanical Circulatory Support Systems and Pediatric
 Cardiopulmonary Perfusion*
Hershey, PA, May 19-22, 2005

Pitfalls in cardiac assist modeling
 Vandenberghe S, Yu Y, Segers P, Antaki J, Steendijk P, Meyns B, Verdonck P

Gordon Research Conference
Big Sky, MO, August 21-26, 2005
Poster presentation

In vitro evaluation of pulsatile use of the new Medos Deltastream pump
 Vandenberghe S, Segers P, Antaki J, Shihab R, Verdonck P
 ASAIO J 2005;51(2):43A
51st ASAIO Conference
Washington, June 9-11, 2005
Poster presentation

2003

A comparison of PUCA II LVAD and IABP for cardiac unloading and perfusion in an in vitro setup
 Vandenberghe S, Segers P, Josemans H, Van Loon JP, Rakhorst G, Verdonck P
 ASAIO J 2003;49(2):158
 Artif Organs 2003;27(4):318
ASAIO-ISAIO joint conference
Washington, June 19-21, 2003
Poster presentation by Dumont K

Unloading and perfusion capacities of the IABP and PUCA II assist systems
 Vandenberghe S, Segers P, Josemans H, Van Loon JP, Rakhorst G, Verdonck P
 Abstract book p. 16
10th FECECT conference
Funchal, June 11-14, 2003
Oral presentation

Cardiac unloading and perfusion achieved with the PUCA II system and an IABP: a comparative in vitro study
 Vandenberghe S, Segers P, Josemans H, Van Loon JP, Rakhorst G, Verdonck P
 Abstract book p. 215-216
XXXVIII Congress of the European Society for Surgical Research
Ghent, May 28-31, 2003
Oral presentation

2002

Accuracy of gated blood pool spect hybrid model: phantom validation
 Nichols K, Shoyeb A, Shahzad A, De Bondt P, Vandenberghe S, Bergmann S
7th Annual ASNC Symposium
Baltimore, September 26-29, 2002
Oral presentation by Nichols K

Development and validation of a dynamic ventricle phantom for planar and tomographic radionuclide ventriculography studies

De Bondt P, Vandenberghe S, De Winter O, De Sutter J, Staelens S, Segers P, Verdonck P, Van de Wiele C, Dierckx R

EANM congress

Vienna, August 31-September 4, 2002

Oral presentation by De Bondt P

Gated blood pool SPECT measurements tested with a biventricular dynamic physical phantom

Nichols K, Shoyeb A, Shahzad A, De Bondt P, Vandenberghe S, Bergmann S

SNM 49th Annual Meeting

Los Angeles, June 15-19, 2002

Oral presentation by Nichols K

Tissue engineering of heart valves needs a pulsatile bioreactor

Dumont K, Yperman J, Segers P, Vandenberghe S, Meuris B, Flameng W, Verdonck P

Abstract book p.47

6th Annual Hilton Head Workshop: prosthetic heart valves

Hilton Head Island, March 6-10, 2002

Oral presentation by Dumont K

Unloading with a diagonal pump: mathematical simulation

Vandenberghe S, Segers P, Meyns B, Verdonck P

Abstract book p. 72

2nd National day on Biomedical Engineering

Brussels, October 18, 2002

Poster presentation

Unloading capacities of a rotary blood pump: a mathematical model study

Vandenberghe S, Segers P, Meyns B, Verdonck P

Abstract book p.82

15th Congress of the Cardiovascular Systems Dynamics Society

Sendai, October 13-16, 2002

Poster presentation by Segers P

In vitro evaluation of PUCA pump performance

Vandenberghe S, Segers P, Van Tricht I, Van Loon J-P, Rakhorst G, Verdonck P

Int J Artif Org 2002;25(7):665

29th ESAO congress

Vienna, August 28-31, 2002

Oral presentation

Effect of rotary blood pump on LV energetics assessed by mathematical modelling

Vandenberghe S, Segers P, Meyns B, Verdonck P

Abstract book, p.158

PV Loops: international congress on ventricular function and failure

Maastricht, January 17-19, 2002

Poster presentation

2001

A new pulsatile bioreactor for tissue engineered heart valve formation
 Dumont K, Vandenberghe S, Segers P, Meuris B, Yperman J, Segers P, Flameng W, Verdonck P
2nd PhD Symposium, Faculty of Engineering, Ghent University
Gent, December 12, 2001
Poster presentation by Dumont K

Prototype of pulsatile bioreactor for the creation of tissue engineered aortic heart valves
 Dumont K, Segers P, Vandenberghe S, Meuris B, Yperman J, Flameng W, Verdonck P
 Abstract book p.46
First National Day on Biomedical Engineering
Brussels, October 19, 2001
Poster presentation by Dumont K

Mock Loop Testing of On-X Prosthetic Valve in Mitral Position
 Verdonck P, Dumont K, Vandenberghe S, Segers P, Van Nooten G
 Artif Organs 2001; 25(10): 847
13th World Congress of the International Society for Artificial Organs
Osaka, October 5-10, 2001
Oral presentation by Verdonck P

Mock loop testing of ON-X prosthetic heart valve with Doppler echocardiography
 Verdonck P, Dumont K, Vandenberghe S, Segers P, Van Nooten G
 Int J Artif Org 2001 ; 24(8) :548
28th ESAO conference
Gent, September 22-25, 2001
Oral presentation by Verdonck P

New pulsatile bioreactor for the in vitro formation of tissue engineered heart valves
 Dumont K, Segers P, Vandenberghe S, Vervaeke K, Meuris B, Yperman J, Flameng W, Verdonck P
 Int J Artif Org 2001; 24(8):557
28th ESAO conference
Gent, September 22-25, 2001
Oral presentation by Dumont K

A new pulsatile bioreactor for tissue engineered valve formation
 Dumont K, Segers P, Vandenberghe S, Meuris B, Yperman J, Flameng W, Verdonck P
 Archives of Physiology and Biochemistry 2001;109S:74
XXVI Congrès de la Société de Biomécanique
Marseille, September 12-14, 2001
Poster presentation by Dumont K

Comparison of different algorithms for the calculation of left ventricular ejection fraction from planar radionuclide ventriculography studies: a dynamic phantom study

De Bondt P, Vandenberghe S, De Sutter J, De Mey S, Cottens T, Van de Wiele C, De Winter O, Segers P, Verdonck P, Dierckx R
J Nuclear Med, supplement, 2001: 162P
48th SNM Annual Meeting
Toronto, June 23-27, 2001
Oral presentation by De Bondt P

Calculation of left ventricular ejection fraction from planar and tomographic radionuclide ventriculography studies: a dynamic left ventricular phantom study.
De Bondt P, Vandenberghe S, De Sutter J, De Mey S, Cottens T, Van de Wiele C, De Winter O, Segers P, Mariano-Goulart D, Verdonck P, Dierckx R
Program book p.21
10th Triennial symposium of BGNG
Knokke, May 18-20, 2001
Oral presentation by De Bondt P

Mock loop testing of ON-X prosthetic heart valve with Doppler Echocardiography
Verdonck P, Dumont K, Vandenberghe S, Segers P, Van Nooten G
Advances in Cardiac Surgery 2001; supplement: 5
Advances in Cardiac Surgery
San Diego, May 5, 2001
Poster presentation by Verdonck P

Mathematical model estimation of LV unloading by rotary blood pumps
Vandenberghe S, Segers P, Meyns B, Verdonck P
Artif Organs 2001; 25(10): 812
13th World Congress of the International Society for Artificial Organs
Osaka, October 5-10, 2001
Oral presentation by Verdonck P

Effect of Rotary Blood Pumps on LV Energetics Assessed by Mathematical Modelling
Vandenberghe S, Segers P, Meyns B, Verdonck P
Int J Artif Org 2001; 24(8) :541
28th ESAO conference
Gent, September 22-25, 2001
Oral presentation

Effect of Rotary Blood Pump Failure on LV Energetics Assessed by Mathematical Modelling
Vandenberghe S, Segers P, Meyns B, Göbel C, Verdonck P
Program book : A7
9th ISRP conference
Seattle, August 17-20, 2001
Oral presentation

Testing of cardiac assist devices in a newly designed mock loop
Vandenberghe S, Segers P, De Wachter D, Verdonck P

ASAIO J 2001; 47(2):105
47th ASAIO Conference
New York, June 6-9, 2001
Poster presentation

2000

Characterisation and optimisation of Cardiac Assist Devices
Vandenberghe S, Verdonck P
1st PhD Symposium, Faculty of Engineering, Ghent University
Gent, December 5, 2000
Poster presentation