Christoph Huber
CURRICULUM VITÆ

2016

INDEX

1. PERSONAL DATA

Surname	Huber
Name	Christoph
Titles	Professor Dr. med., FMH, FECTS
Date and place of birth	5th December 1970, Liestal, CH
Nationality	Swiss and French
Family status	Married to Ann Huber-Sigwart Two children
Address	Dählhölzliweg 17, 3005 Bern Switzerland
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LANGUAGES

German:	mother tongue
French:	mother tongue
English:	fluently written and spoken
Italian:	spoken

2. PRESENT POSITION

Professor and Head of the Cardiovascular Surgery Division
University Hospital Geneva, HUG
Rue Gabrielle-Perret-Gentil 4
CH-1205 Genève

Nominal workload distribution in %

60% Clinical work
10% Teaching
10% Research
20% Administration

3. DIPLOMAS AND REGISTRATIONS

May 2016	Full Professor of Cardiac Surgery, University of Geneva, Switzerland
Nov. 2012	Privat Dozent, University of Bern, Switzerland
Jan. 2008	Certificate of Full Registration as a Medical Practitioner with Specialist Registration for Cardio-Thoracic Surgery of the United Kingdom, GMC6049379
May 2007	Swiss National Board of Cardiovascular surgery (FMH) Practical exam 15.05.2007, Prof T. Carrel/Dr. U. Niederhäuser, Sion, Switzerland
Sept. 2005	European Board of Cardiothoracic Surgery (FECTS), Barcelona, Spain
Dec. 2000	Part one Boardexam of the Swiss Surgical Unions (FMH), Bern, Switzerland
14. Jan. 99	Doctor of Human Science (Dr. med.) Title of Theses: Increased Catecholamines in Patients with essential hypertension. Basel, Switzerland
18. Nov. 98	Diplôme de médecin de la Confédération Helvétique (Medical Degree), Basel, Switzerland
July 1999	ECFMG/USMLE degree, Geneva, Switzerland and London, United Kingdom

4. QUALIFICATIONS AND COURSES

July 2014	Third German National TAVI user meeting, Munich, Germany
June 2014	Good Clinical Practice Certificate Part 1-4 including: Informed consent, research ethics evaluation, Introduction to research
July 2013	Second German National TAVI user meeting, Munich, Germany
Jan. 2013	Good Clinical Practice
Nov. 2009	Techno college and Postgraduate Program, Annual EACTS Meeting, Vienna Austria
March 2009	Hands-on course in basic pediatric echocardiography, London, UK
Febr. 2009	ECMO course London
Dec. 2008	Proctor (Faculty) at Advanced EDGE course organized by Medtronic Tolochenaz, CH
Sept. 2008	Techno college and Postgraduate Program, Annual EACTS Meeting, Lisbon Portugal

March 2008	Proctor for EDGE course, Medtronic Tolochenaz, Switzerland
Sept. 2007	Techno college and Postgraduate Program, 21st EACTS Annual meeting Geneva, Switzerland
Aug. 2007	Proctor for EDGE course, Medtronic Tolochenaz, Switzerland
Oct. 2006	HeartLAB 2006, Zürich, Switzerland (Instructor and Tutor)
Sept. 2006	Techno college and Postgraduate Program, 5nd EACTS / ESTS Joint Meeting, Stockholm, Sweden
Oct. 2005	Instructor and Tutor at the HeartLAB 2005, Zürich, Switzerland
Sept. 2005	Techno college and Postgraduate Program, 4ndEACTS / ESTS Joint Meeting, Barcelona, Spain
Oct. 2003	Instructor and Tutor at the HeartLAB 2003, Zürich, Switzerland
Oct. 2003	Postgraduate Program, 2nd EACTS / ESTS Joint Meeting, Vienna, Austria
Oct. 2002	Instructor and Tutor at HeartLAB 2002, Zürich, Switzerland.
Feb. 2003	Vascular access Course 2003, Zürich, Switzerland
Nov. 2002	Techniques in micro vascular anastomosis, ESI, Hamburg, Germany
Oct. 2001	ATLS Instructor Course 2001, Basel, Switzerland
April 2001	ACLS Provider Course 2001, Basel, Switzerland
Feb. 2001	ATLS Student Course 2001, Basel, Switzerland
Nov. 1999	Practical training course in surgical laparascopy, Biel, Switzerland

TRAINING AND EDUCATION

1978-1991	Elementary/secondary/high school, Liestal, Switzerland
19. Dec. 1991	Qualifying for university entrance / natural science degree (Maturité)
1992-1998	University Basel Medical School, Switzerland
Jan. 1999	Doctor of Human Science (Dr. med.)
Nov. 2012	Privat-Dozent – (Priv.-Doz.) degree, University of Bern, Switzerland

5. PROFESIONAL ACTIVITIES

Jan. 1999 - May 1999	Army doctor (grade officer)
June 1999 - Aug. 1999	Visiting fellow, Royal Brompton Hospital London and at Harefield National Heart Center, United Kingdom (Sir Prof. M. Yacoub)
Sept. 1999 - Sept. 2001	Resident, Department of General, Vascular and Thoracic Surgery Including ICU Residency (Jan. 2001 - April 2001) at the District Hospital of Biel, Switzerland (Prof. T. Laffer / Dr. C. Jenny)
Oct. 2001 - Sept. 2002	Resident, University Clinic for Cardiovascular Surgery, Inselspital, Bern, Switzerland (Prof. TP. Carrel)
Oct. 2002 - Dec. 2003	Resident, Department of Cardiovascular Surgery, University Hospital Lausanne, Switzerland (Prof. LK. von Segesser)
Jan. 2004 - June 2005	Senior Clinical Fellow Cardiac Surgery, Division of Cardiac Surgery Brigham and Women's Hospital, Boston, USA (Prof. LH. Cohn)
July 2005 - Sept. 2006	Chief Resident, adult and congenital Cardiac Surgery, University Hospital Lausanne, CHUV (Prof. LK. von Segesser / Dr. M. Hurni)
Oct. 2006 - Dec. 2007	Consultant Adult Cardiac Surgery, Heart Center Valais, RSV, Sion, and University Hospital Lausanne, CHUV Switzerland, (Dr. F. Stumpe / Prof. LK. von Segesser)
Jan. 2008 - June 2008	Consultant Adult and Congenital Cardiac Surgery, University Hospital Lausanne, CHUV (Prof. LK. von Segesser / Dr. M. Hurni)
July 2008 - July 2009	Senior specialist registrar (SpR), Congenital Cardio-Thoracic Surgery, Great Ormond Street Hospital, London, United Kingdom (Prof. M. Elliott / Mr. V. Tsang)
Aug. 2009 – March 2015	Consultant Cardiovascular Surgeon and Director Surgical TAVI Program, University Clinic for Cardiovascular Surgery, Inselspital, Bern, Switzerland (Prof. TP. Carrel).
April 2015 – April 2016	Senior Consultant Cardiovascular Surgeon, Director Surgical TAVI Program, Director surgical skill training for 4th year medical students. University Clinic for Cardiovascular Surgery, Inselspital, Bern, Switzerland (Prof. TP. Carrel).
Mai 2016 -	Professor and Head of the Cardiovascular Surgery Division University Hospital Geneva, HUG

6. SIWF Award

SIWF ISFM FMH

Schweizerisches Institut für
ärztliche Weiter- und Fortbildung

SIWF AWARD

für besonderes Engagement
in der ärztlichen Weiterbildung

Herr Dr. med. Christoph Huber

wird auf Grund der Nomination durch ehemalige Assistenzärztinnen und Assistenzärzte mit dem SIWF Award 2014 ausgezeichnet.

Dr. med. Werner Bauer
Präsident SIWF

Christoph Hänggeli
Geschäftsführer SIWF

Bern, 11. September 2014

7. RESEARCH

On-going research projects

Battery less Sunlight-Powered Pacemaker	Collaboration ArtOrg A. Häberli

Battery less Cardiacmotion powered Pacemaker	Collaboration ArtOrg A. Zurbuchen
AV-Flow aortic valve flow simulation	Collaboration ArtOrg D. Obrist

Clinical research

Improvement of neurologic outcomes in cardiac surgery

MECC for reoperation

Process analysis aortic valve replacement

Planned research projects

Device research

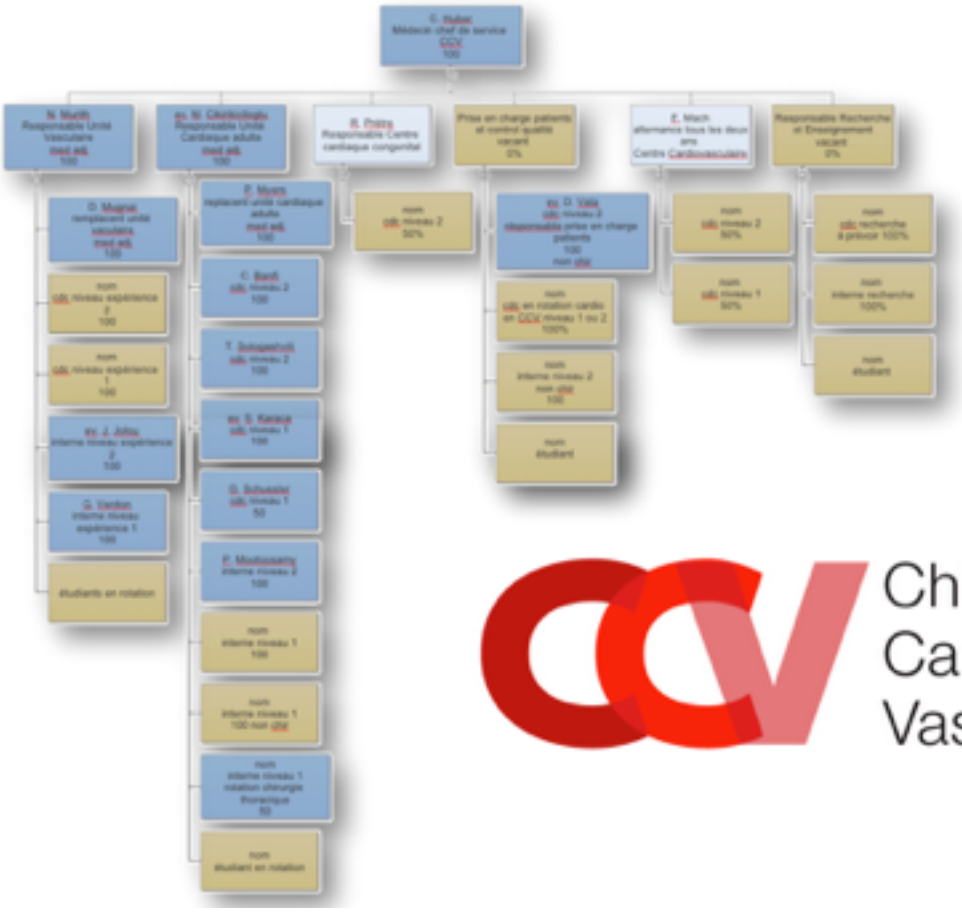
Percutaneous TA TAVI platform

Surgical device based LAA closure

Flow dynamics of prosthetic valves

8. ADMINISTRATION

See organogram of the division of cardiovascular surgery, HUG Geneva.



Chirurgie
Cardio
Vasculaire

9. HONOURS AND AWARDS

Sept. 2014 Swiss SWIF-Award. Distinction as best Swiss teacher for Cardiac Surgery, Bern, Switzerland

Oct. 2012 PCR London Valves: Best case award: Worldwide first surgical implantation of a transcatheter valved stent in mitral position, PCR London Valves, London, United Kingdom

May 2009 National research prize of the Swiss Heart Foundation 2009.
In recognition of developing the transapical TAVI approach:
Trans Catheter Valve Replacement of the Aortic Valve – The Direct Access Trans Apical Procedure (award sum chf 20'000)

Sept. 2007 Techno College Innovation Award In recognition of developing the transapical TAVI approach: The Trans Apical Procedure for the Direct Access Aortic Valve Replacement (DAVR) – Personal achievements. EACTS (6th EACTS / ESTS Joint Meeting), Geneva, Switzerland (Honorable mention / second place)

Sept. 2005 St. Jude Medical, C. Walton Lillehei, PhD., MD. Young Investigator's Award for the presentation of: Direct Access Valve Replacement (DAVR) – Are we entering a new era? On the occasion of the 19th Annual Meeting of the European Association for Cardio-Thoracic Surgery, EACTS (4th EACTS / ESTS Joint Meeting), Barcelona, Spain (Honorable mention / second place)

June 2005 Annual award of Swiss Society of Thoracic-, Cardiac- and Vascular Surgery. Direct access percutaneous valve replacement – A novel approach to minimally invasive off pump aortic valve replacement using valved stents", Zürich, Switzerland (award sum USD 10'000)

Feb. 2004 ISES Peripheral Vascular Fellow's Forum Award for the presentation of: New tools for new goals: Ultrasound navigation through the heart for off-pump aortic valved stent implantation. On the occasion of the ISES 2004 Peripheral Vascular Fellow's Forum award, Scottsdale, USA (award sum USD 2000)

Oct. 2003 St. Jude Medical, C. Walton Lillehei, PhD., MD. Young Investigator's Award for the presentation of: Do Valved Stent Compromise Coronary Flow? On the occasion of the 17th Annual Meeting of the European Association for Cardio-Thoracic Surgery, EACTS (2nd EACTS / ESTS Joint Meeting), Vienna, Austria (first prize, award sum USD 10'000).

10. CHAIRMEN AND INVITED LECTURES

June 2016 Chairmen Rapid Fires session heart failure
National Joint Year Congress of the Swiss Society of Cardiology and the Swiss Society of Cardio- and thoracic-vascular surgery (SGK/ SGHC), Lausanne, Switzerland

June 2016 Invited speaker functional mitral regurgitation and heart failure a surgeons view.
National Joint Year Congress of the Swiss Society of Cardiology and the Swiss Society of Cardio- and thoracic-vascular surgery (SGK/ SGHC), Lausanne, Switzerland

June 2016 Chairmen 9th Interventional symposium on high risk and innovative cardiac interventions, meet the expert, Lugano, Switzerland

Sept. 2015 Invited speaker Pre-interventional CT planning, Transcatheter aortic and mitral valve interventions, EACTS academy, Windsor, United Kingdom

Sept 2015 Invited speaker Transcatheter aortic valve implantation device parade: what do they have in common, what are the differences? Transcatheter aortic and mitral valve interventions, EACTS academy, Windsor, United Kingdom

Sept 2015 Invited speaker TAVI complications what can happen and how can we avoid it?, Transcatheter aortic and mitral valve interventions, EACTS academy, Windsor, United Kingdom

Sept. 2015 Invited speaker: How Syntax and Excel change the landscape – Contra and Rebuttal Contra, ESC 2015, London, United Kingdom

June 2015 Chairmen: Open issues related to TAVI
National Joint Year Congress of the Swiss Society of Cardiology and the Swiss Society of Cardio- and thoracic-vascular surgery (SGK/ SGHC), Zürich, Switzerland

June 2015 Chairmen: Lost and found Session
National Joint Year Congress of the Swiss Society of Cardiology and the Swiss Society of Cardio- and thoracic-vascular surgery (SGK/ SGHC), Zürich, Switzerland

June 2015 Chairmen: Non-cardiac surgery: Cardiovascular assessment and management – How to session
National Joint Year Congress of the Swiss Society of Cardiology and the Swiss Society of Cardio- and thoracic-vascular surgery (SGK/ SGHC), Zürich, Switzerland

June 2015 Chairmen: Moderated Postersession Cardiac failure, valvulopathies and heart transplant
National Joint Year Congress of the Swiss Society of Cardiology and the Swiss Society of Cardio- and thoracic-vascular surgery (SGK/ SGHC), Zürich, Switzerland

May 2015 Chairmen: Mitral valve regurgitation diagnostics and therapy, 2015
4th Heart Valve Symposium, Bern, Switzerland

Oct. 2014 Chairmen: Late breakers I, EACTS, Milano, Italy

Oct. 2014 Invited speaker: postgraduate course: The rocky annulus, EACTS, Milano, Italy

Oct. 2014 Invited speaker: Where valves can go, EACTS, Milano, Italy

Oct. 2014 Invited speaker: How to simplify TAVI: Should it be done without prior BAV, EACTS, Milano, Italy

Oct. 2014 EACTS, Milano, Italy
-Invited discussant: Suprasternal Approach TAVR Avoids Thoracotomy FIM.
-Invited discussant: Right anterior mini-thoracotomy for isolated aortic valve replacement: Ten year experience in 590pt.
-Invited discussant: One year registry outcomes oft he recently approved transapical ACURATE TAVI device.

Sept. 2014 London Valve: Life case TAVI – FIM TAVI into degenerated Perceval sutureless valve

Sept. 2014 Invited speaker and chairmen: WSCTS, New TAVI devices, Geneva, Switzerland

June 2014 Chairmen and speaker: TAVI workshop, SGK/SGTHGC 2014, Interlaken, Switzerland

May 2014 Invited speaker: Update refresher, general medicine forum, Zürich, Switzerland

April 2014 Invited Lecture: How to design the future of TAVI.
ESCVS, Nice, France

Feb. 2014 Chairmen and speaker: 4th Berner Heart Valve Symposium. Bern, Switzerland

Jan. 2014 Invited Lecture: The Acurate TA autopilot valve – The first intelligent transapical valve concept. Danzig, Poland

Nov. 2013 Chairmen and speaker: First Swiss TAVI user event, Lucerne, Switzerland

Oct. 2013 Invited chairmen: Séance valves, Congrès Francophone de Cardiologie Interventionnelle, Paris, France

Oct. 2013 Invited faculty: Drive the change. The role of durable tissue valve in tomorrow's cardiac surgery, 27th annual meeting, EACTS, Vienna, Austria

Oct. 2013 Council adult domain and invited speaker, 27th annual meeting, EACTS, Vienna, Austria

Invited discussant: Left ventricular unloading by percutaneous trans-septal cannulation of the left atrium in patients bridged to heart transplantation with peripheral venoarterial extracorporeal membrane oxygenation

Invited discussant: Cerebral embolization during transcatheter aortic valve implantation compared with surgical aortic valve replacement

Invited discussant: Seventeen years experience of tricuspid ring annuloplasty: durability and risk factors for failure

Sept. 2013 Chairmen: TAVI: a predictable procedure with predictable outcome London Valve PCR, London, United Kingdom

Sept. 2013 Chairmen poster session: Joint annual meeting SSIC, SSCS, SGHC, Geneva, Switzerland

June 2013 Invited faculty: The benefit of new technologies and their impact on the future management of aortic stenosis, 7th biennale congress, society of heart valve disease, SHVD, Venice, Italy

June 2013 Chairmen and speaker: TAVI workshop, National Joint Year Congress of the Swiss Society of Cardiology and the Swiss Society of Cardio- and thoracic-vascular surgery (SGK/SGHC) 2013, Lugano, Switzerland

June 2013 Invited faculty: Acurte TA sizing recommendations, TAVI workshop, Frankfurt, Germany

May 2013 Chairmen: Acurate positioning of transapical and transfemoral aortic valve with self-expanding and self-seating design, Tools & techniques, EuroPCR, Paris, France

Oct. 2012 Chairmen: New ideas in transcatheter aortic valve replacement, EACTS 2012, Barcelona, Spain

June 2012 Chairmen and speaker TAVI workshop, SGK/SGTHGC 2012, Lausanne, Switzerland

Dec. 2011 Chairman round table discussion: Transcatheter Mitral valve concept, Innovations in Cardiovascular Interventions (ICI) 2011, Tel Aviv, Israel

Nov. 2011 Invited Faculty: Evolution of TAVI, HeatLAB international, Zürich, Switzerland

June 2011 Invited Faculty: The Evolution of Aortic Valve Implantation Congenital and Structural Interventions, CSI, Frankfurt, Germany

Oct. 2010 2ème Symposium romand de cardiologie et chirurgie cardiaque Coppet, Switzerland

Sept. 2010 Invited Discussant: Crimping might affect the durability of transcatheter valves. An experimental analysis. European Association Cardio Thoracic Surgery, 24nd annual meeting, Geneva, Switzerland

June 2010 Chairmen: European Society for Surgical Research 45th annual congress, Centre Médical Universitaire (CMU) Geneva, Switzerland

Sept. 2008 Invited Discussant: In-Vitro Results of a new minimally invasive aortic valve resecting tool. European Association Cardio Thoracic Surgery, 22nd annual meeting, Lisbon, Portugal

Sept. 2007 Invited Lecture: “State of the Art on Aortic Valved Stents”, 19th Annual Meeting of the Mediterranean Association of Cardiology and Cardiac Surgery, MACCS, Opatija, Croatia

Nov. 2005 Chairmen: Symposium “Which future for “Tans-Catheter Valves?” Options & Outcomes meeting 2005 Istanbul, Turkey

Dec. 2004 Invited Lecture: “Direct Access Valve Replacement - DAVR“ BWH Cardio-thoracic Core curriculum, invited lecture, joint meeting 2004, Boston, USA

March 2003 Invited Lecture: “Off-Bypass Placement of Right Sided Valved Stents.” Cardiothoracic Techniques and Technologies, CTT, Miami Beach, FL, USA

11. PROFESSIONAL SOCIETIES

2015-2018 Council member Techno-College of European Association for Cardiothoracic Surgery – EACTS

2014 Program committee member Joint Year Congress of the Swiss Society of Cardiology and the Swiss Society of Cardio- and thoracic-vascular surgery (SGK/ SGHC)

2013 Board member of the Swiss Society of Surgery - SGC

2012 Permanent delegate of chamber of physicians of the Swiss Medical Association – FMH representing the Swiss Society of Thoracic and Cardio Vascular Surgery

2012 Board member of the Swiss Society of Cardiac and Thoracic-Vascular Surgery - SGHC

2013-2016 Council member adult domain of the European Association for Cardiothoracic Surgery – EACTS

Member of the European Association for Cardio

Member of the Society of Thoracic Surgeons – STS

Cardiothoracic Surgery Network - CTSNET

Alumni Basel - αlumniBasel

Member of the Association of Swiss Assistant Doctors and Chief Physicians – VSAO

12. MEETING AND CONGRESS ORGANIZATIONS

2015	29th EACTS annual meeting, Amsterdam, Nederland
2015	Techno College / EACTS, Amsterdam, Nederland
2015	First EACTS educational academy TAI course, Transcatheter and mitral valve interventions, Windsor, United Kingdom
2015	4th TAVI Session National Joint Year Congress of the Swiss Society of Cardiology and the Swiss Society of Cardio- and thoracic-vascular surgery (SGK/SGHC), Zürich, Switzerland
2015	3nd Swiss TAVI user meeting, Lucerne, Switzerland
2015	4th Heart Valve Symposium, Bern, Switzerland
2014	28th EACTS annual meeting, Milano, Italy
2014	3rd TAVI Session National Joint Year Congress of the Swiss Society of Cardiology and the Swiss Society of Cardio- and thoracic-vascular surgery (SGK/SGHC), Interlaken, Switzerland
2014	2nd Swiss TAVI user meeting, Lucerne, Switzerland
2014	3rd Heart Valve Symposium, Bern, Switzerland
2013	27th EACTS annual meeting, Vienna, Austria
2013	2nd TAVI Session National Joint Year Congress of the Swiss Society of Cardiology and the Swiss Society of Cardio- and thoracic-vascular surgery (SGK/SGHC), Lugano, Switzerland
2013	1st Swiss TAVI user meeting, Lucerne, Switzerland
2012	1st TAVI Session National Joint Year Congress of the Swiss Society of Cardiology and the Swiss Society of Cardio- and thoracic-vascular surgery (SGK/SGHC), Lausanne, Switzerland
2012	2nd Heart Valve Symposium, Bern, Switzerland
2011	1st Heart Valve Symposium, Bern, Switzerland

13. OFFFICIAL POSTS AND TECHNICAL/SCIENTIFIC ROLES

Member of the board of the Swiss Society of Cardiac and thoracic aortic surgery.
-Delegate to the FMH medical chamber (FMH)
-Delegate to the Swiss institute for medical educations (SIWF/ISMF)
-Delegate to the Swiss society of general surgery (SGC)

Program committee member of the joint meeting of the Swiss Society of cardiology (SGK/SSC) and the Swiss Society of Cardiac and thoracic aortic surgery (SGHC)

Member of the board of the acquired cardiac domain of the EACTS
-Committee member of abstract selection for the yearly meeting
-Committee member of the Lillehei young investigator award of the EACTS

Member of the board of the Techno College of the EACTS (division of minimally invasive and advanced surgical technics of the EACTS).
-Committee member of the Techn College innovation award of the EACTS Techno College.
-Committee member of the abstract selection for the yearly Techno College

14. REVIEWER ACTIVITY

Deutsche Forschungs Gemeinschaft, DFG

European Journal of Cardio-Thoracic Surgery, EJCTS

Interactive Journal of Cardio Vascular and Thoracic Surgery, IJCTS

Journal America College of Cardiology Interventions, JACC interventions

The Annals of Thoracic Surgery

The Journal of Thoracic and Cardiovascular Surgery

Journal of Heart Valve Disease

Cardiovascular Medicine

15. GRANTS

Feb. 2007 – March 2013	Primary investigator (PI), Swiss National Research Grant No SNF 3200B0-113437, titled “Direct Access Valve Replacement (DAVR) for aortic valves via the Trans Apical Procedure (TAP).” Bern, Switzerland
Jan. 2008 – June 2009	Primary investigator, Fond CardioMet Grant, center for cardiovascular and metabolic research, titled: “Direct Access Aortic Valve Replacement”, University Hospital Lausanne, CHUV, Switzerland
July 2008 – July 2009	Medtronic Training and Travelling Scholarship, Great Ormond Street Hospital, London, United Kingdom

16. SPONSORED STUDIES AND REGISTRIES

PI Portico pre-CE	Pre CE Approval study for the Portico TA TAVI device
PI Cardiogard trial	Randomized Embolic protection for surgical AVR
Co-Founder and PI	Swiss TAVI Register (National TAVI Registry)
Co-PI SAVI Registry	Symetis Transcatheter Aortic Valve Replacement Registry
Co-PI SAVI 2 Registry	Symetis Transcatheter Aortic Valve Replacement Registry
	Director of the Symetis training center, Inselspital Bern
Co-PI SURTAVI trial	Randomized multicenter study for intermediate risk patients undergoing SAVR vs. TAVI with Corevalve Medtronic
Co-PI Reprise II	Repositionable percutaneous replacement of stenotic aortic valve through implantation of Lutus valve system, Boston Scientific

17. INDUSTRIAL RELATIONSHIPS

Consultant	Medtronic, Minneapolis, USA Symetis, Ecublens, Switzerland
Advisor	Edwards Lifesciences, Irvine, USA St. Jude Medical, Minnesota, USA
Proctor	Edwards Lifesciences, Irvine, USA Symetis, Ecublens, Switzerland

18. PATENTS (PUBLISHED) AND INTELECTUAL PROPERTIES

US 8182530 B2 Methods and devices for repair or replacement of heart valves or adjacent tissue without the need for full cardiopulmonary support

WO 2006041505A1 Methods and devices for repair or replacement of heart valves or adjacent tissue without the need for full cardiopulmonary support

US 20120221100A1 Methods and devices for repair or replacement of heart valve or adjacent tissue without the need for full cardiopulmonary support

EP 1804725 A1 Methods and devices for repair or replacement of heart valves or adjacent tissue without the need for full cardiopulmonary support

US 20130178908A1 Electrophysiological endocardiology tool

WO 2013104079A3 Electrophysiological endocardiology tool

EP 2491891 A3 Devices for embolic protection and mitral valve repair

EP 2471492 A1 Implantable heart valve

EP 2481375 A2 Devices for delivery and removal of heart valves

19. THESIS DIRECTOR

Years	**Titel**	**Names**
2013 - 2015	Patients-Prosthesis Mismatch after TAVI	Joshua Hägler
2013 - 2015	Process optimization in surgical AVR	Maria Nucera
2013 - 2015	Neurologic outcomes after type a dissection	Brigitta Reinhard
2013 - 2015	Validation of OsiriX for TAVI sizing	Marlena Gumsheimer
2013	Quality of live after TAVI and after AVR	Kathrin Ammon
2004	Valved Stent for off-pump MVR	Ma Liang
2002	Endovascular valve surgery	Zhou Junqing

20. BIO TO CHRISTOPH HUBER

Professor Dr. med. Christoph Huber, FMH, FECTS, is head division of cardiovascular surgery at the University Hospital, HUG, Geneva, Switzerland after moving as senior consultant cardiovascular surgeon and director of the surgical TAVI Program from the University Hospital Bern, Inselspital, Switzerland in May 2016. His specialisations include heart failure support, minimally invasive valve surgery, transcatheter valve therapies, aortic surgery. He is also founder and CTO of Endoheart AG (Winterthur, CH) a Swiss Start-up MedTech company developing and promoting transcatheter valve therapies based on Christoph Huber's proprietary transapical access patent (US8182530B2) issued by the US Patent and Trademark Office, May 22, 2012.

His pioneering work, his expertise of research in the field of transcatheter valves and more specifically the development of the Trans Apical TAVI procedure have been recognised internationally as reflected by numerous publications and awards: Oct. 2003 C. Walton Lillehei, PH. D., M.D. Young Investigator’s award. February 2004 ISES Peripheral Vascular Fellow’s Forum. June 2005 Swiss Society of Thoracic-, Cardiac- and Vascular Surgery award. In 2007 Christoph Huber has been peer recognised by the European Society of Cardiothoracic surgery as the inventor of the Trans Apical TAVI - a procedure being performed over 100’000 times worldwide. The Swiss Heart Foundation recognised his cardiovascular achievements with the 2009 award for outstanding research.
His research was Grant supported by a Swiss national Grant and a Grant of the Medical Faculty of the University of Lausanne.

Christoph Huber published the first textbook on aortic transcatheter valve therapies in 2009. He is member of the board of the Swiss Society of Cardiovascular Surgery (SGHC), the medical chamber of the FMH and member of the board of the adult domain committee of the European Association for Cardio-Thoracic Surgery (EACTS) as well as the EACTS Techno College.

Reflecting a very strong on-going teaching commitment Christoph Huber organizes the 4th year surgical training program for the Bern medical students at the Inselspital for the last three years, participates in the problem based learning program of the 5th year and gives lectures for 6th year medical students on cardiac valve disease, coronary artery disease, heart failure and thoracic aortic disease. He also is one of most frequent cardiac surgery teacher for younger colleagues in the operation room. Last year he was awarded best cardiac surgery teacher of Switzerland by the SIWF.

Very frequently he is invited guest speaker at international meetings and he also plays a very active role as Consultant in the MedTech Industry and is Advisor for several market analysis companies. He further is active Proctor for several TAVI systems in and outside Switzerland.

EACTS Daily News
European Association For Cardio-Thoracic Surgery
The official newspaper of the 26th EACTS Annual Meeting 2012 Monday 29 October

Cardiac: Abstract
08:15–09:45 **Room 118/119**

The TA PLUG

The TA PLUG is the first true-percutaneous self-expanding and self-centring device to successfully close a 39F left ventricular apex access in the experimental setting.

Christoph Huber

Christoph Huber developed and pioneered the concept and the method of transapical (TA) TAVI in 2004. Only two years later Thomas Walter performed the first successful clinical implant. Since then the most promising TA TAVI technique started its steep ascension towards becoming the most popular surgical TAVI access. Significant advantages over all other access techniques including: A) Shorter working distance allowing for a more precise target site device delivery. B) Eased wire crossing of the highly stenosed aortic valve directed by the native blood flow of the ejecting heart. C) Avoided crossing of the aortic arch by the larger valve delivery systems. D) Increased access diameter resulting in less traumatic device crimping, beneficially differentiate transapical access from other TAVI access routes.

Nevertheless, despite the very favourable evidence, the enthusiasm for the transapical access is hampered by the mere fact of requiring a surgical cut-down and surgical closure.

The author's focus is to move the transapical access platform further. The last hurdle to overcome, to allow the transapical access to become the number one TAVI route, is a reliable and save true-percutaneous closure of the apex. The encouraging TA PLUG experimental results are being presented for the first time at the annual EACTS meeting 2012 in Barcelona.

The device is self-expanding and made from full-core biocompatible material. Ex-

Continued on page P8

Transcatheter Valve News

Transapical access—the multipurpose route to treating structural heart disease

CHRISTOPH HUBER

COMMENT & ANALYSIS

The transapical approach is the only antegrade route for transcatheter aortic valve implantation (TAVI) and has gained wide popularity because of its advantages over non-antegrade approaches[1–3]. Christoph Huber is the inventor of the transapical TAVI technique. He reviews the technical and clinical considerations of this approach

Aortic valve crossing in the antegrade transapical approach is usually performed at the first attempt and repeated attempts (as typically seen in retrograde techniques) are avoided. The aortic arch is negotiated with minimal handling and after transcatheter exchange, a stiff guidewire is placed in the descending aorta creating a sturdy and reliable rail for the delivery system. In contrast, retrograde approaches have to make use of a pre-bend wire trapped in the left ventricle without further support and with a sustained risk of myocardial perforation.

Following transapical balloon valvuloplasty under rapid pacing, the delivery system is then advanced over the wire. The delivery system is then inserted in-no touch technique without crossing of the aortic arch avoiding the risk of embolisation from either the ascending aorta or the aortic arch. Precise axial alignment is achieved readily and does not rely on additional technical features of the delivery system. The final step of valve implantation is eased by the shortened working distance and becomes very precise, predictable and reproducible. A lower threshold for post-implantation balloon re-dilatation might be another reason of significantly lesser paravalvular leaks when compared with retrograde techniques as for example the transfemoral approach.

Transfemoral TAVI is generally contraindicated in patients with peripheral artery disease and has been repeatedly shown to have a considerable local complication profile[4,5], affecting more than 10% of patients. In contrast, the local complication rate for the transapical access is reported to be below 1%[6,7]. More importantly, the rate of stroke is also reported to be significantly lower with the antegrade transapical route when compared to retrograde delivery techniques[8]. The increased stroke rate of transfemoral TAVI, despite well-engineered delivery systems, might be the result of the challenging aortic arch and aortic valve crossing—possibly generating a higher amount of emboli.

Additionally, the longer working distance from the femoral puncture site to the target area might also negatively affect the precision of placement and the delivery process. Therefore, this longer distance could be responsible for the significant increase in paravalvular regurgitation when compared with transapical results[8,10].

Despite the favourable evidence, the enthusiasm for the transapical access remains dampened because of the increased surgical invasiveness with the approach. However, a paradigm shift is approaching.

It has been identified that there is a growing need for a true percutaneous transapical access and as a result, many technical solutions have emerged. Access closure of the apex has become technically feasible and first experimental data have been reported. First clinical results are expected soon[11].

I have been involved with the development of a self-sealing device—the TA Plug (Endoheart). It is the first device to have successfully sealed large calibre transapical access up to 39F sheath diameter in a true-percutaneous fashion in animal experiments. Other closure devices rely on automated suture mediated closure or myocardial anchoring. These technical developments clearly indicate the growing need of a facilitated transapical access. Reliable and safe true-percutaneous entry and closure of the transapical access site have become as essential as automated access closure for transfemoral transcatheter techniques for successful methodical adoption.

Transapical access to the aortic valve and to other intra-cardiac structures is the most direct and most promising route for transcatheter treatment of structural heart disease or even coronary heart disease. The access choice for TAVI seems unfortunately often dictated by a strategy of the least invasiveness and a referring bias and not by clinical evidence or the patient's best interests. The true-percutaneous transapical TAVI assembles all patients' benefits including device durability and eased procedural handling resulting in improved overall outcomes. Transapical access harbours the potential to become first choice TAVI access in the near future.

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Conflicts of interests: Christoph Huber is a proctor for Edwards Lifesciences, for Symetis and consultant for Medtronic and shareholder of Endoheart AG

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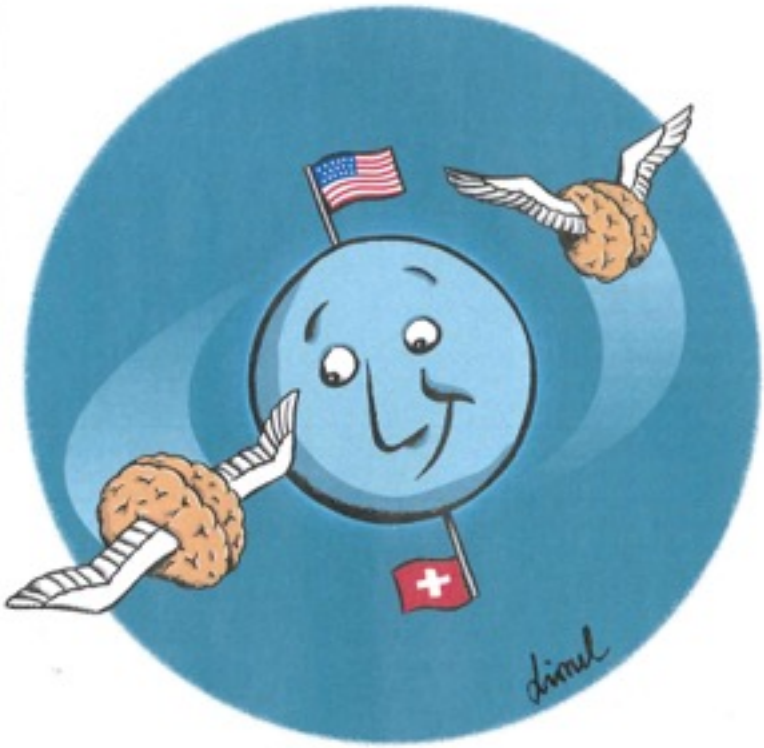

suisses expatriés. Laurent Mieville affirme que «la Suisse est redevenue attractive, en particulier pour les professeurs stars.»

Mais ce qui est vrai au niveau académique se retrouve-t-il dans l'économie? Le capital-risqueur Olivier Tavel en doute fortement. Il relève que pas une des start-up dans lesquelles son fonds Vinci a investi n'a de managers suisses. «C'est caractéristique du manque de leaders que nous avons en Suisse.» Directeur du Venture Lab, Jordi Montserrat constate lui aussi que la moitié des étudiants de ses cours d'entrepreneurship sont d'origine étrangère. Les statistiques (voir tableau) confirment que nul n'est prophète en son pays. Alors, Lorenzo Leoni se prépare-t-il une amère déception en lançant sa boîte dans le Biopolo du Tessin plutôt qu'à San Diego?

La réponse est apportée par l'homme qui le rejoint à →

«Le dynamisme entrepreneurial américain est contagieux»

Christoph Huber, Direct Access Technology

Ce chirurgien de 36 ans, qui est allé se perfectionner en 2004 et en 2005 au Brigham Hospital de la Harvard Medical School à Boston, se demandait depuis longtemps comment remplacer l'opération lourde consistant à changer une valve cardiaque par une procédure moins invasive. Avant de partir, il avait déjà l'idée de percer le cœur avec une fine sonde cardiaque porteuse de la valve à installer. Aux Etats-Unis, son projet devient brevet puis entreprise avec la création de Direct Access Technology. «L'enthousiasme des Américains pour de nouveaux projets est communicatif, explique-t-il.

En présentant mon projet là-bas, j'ai réalisé son potentiel économique. C'est aussi un industriel qui m'a conseillé de breveter mon invention, alors que pour un vague salaire de consultant il aurait pu se l'approprier facilement.»

Il est vrai que l'un des plus grands risques pour les chercheurs-entrepreneurs suisses qui viennent étudier aux Etats-Unis est «de se faire happer par un système de transfert de technologie aussi efficace que dynamique», considère Pascal Marmier, conseiller scientifique de la Swiss House de Boston.

Alors quelles sont les raisons de ramener Direct Access Technology en Suisse? «Ma famille et ma carrière sont ici, répond Christoph Huber. Mais aussi parce que je crois au potentiel des technologies médicales pour un pays comme le nôtre.»

Il ne cache pas pourtant les difficultés un peu bureaucratiques et surtout financières. Il lui reste à trouver les fonds pour financer l'extension de son brevet puis les essais cliniques.