



**Application for Hosting EACTA/ESA Cardiothoracic and Vascular Anaesthesia Fellowship Programme**

<b>Fellowship Information</b>	Fellowship in Cardiovascular and Thoracic Anesthesia		
<b>Institution Name</b>	Heart Center of the Technical University of Dresden		
<b>Address</b>	Fetscherstrasse 76, 01307 Dresden		
<b>Website</b>			
<b>Chair Name</b>	<a href="http://www.herzzentrum-dresden.com">www.herzzentrum-dresden.com</a>	<b>Email</b>	Jens.fassl@herzzentrum-dresden.com

<b>Programme Director</b>	Fassl, Jens		
<b>Name</b>			
<b>Board Certification(s)</b>	Anesthesiology		
<b>Title/Affiliation</b>	PD Dr.med. habil.		
<b>Number of original publications</b>	68		
<b>EACTA, ESA, or other societies membership</b>	EACTA		
<b>If yes, membership's number</b>			
<b>Email</b>	Jens.fassl@herzzentrum-dresden.com		
<b>Mailing Address</b>			
<b>Street</b>	Fetscherstrasse 76		
<b>City</b>	Dresden. Germanv	<b>Region</b>	01067
<b>Country</b>		<b>City/Zip code</b>	
<b>Phone</b>	+49 351 450 1603	<b>Fax</b>	+49 351 450 1604

Will the Programme director devote sufficient time to provide substantial leadership to the programme and supervision for the fellows?  Yes  No

Will the Programme director review the fellows' clinical experience logs at least quarterly and verify completeness and accuracy?  Yes  No

Does the national/international regulatory authority(s) recognizes the institutional CTVA Fellowship Programme?  Yes  No

If yes, please explain

Completion of the programme will be acknowledged by the Department of Anaesthesia and Intensive Care at the host centre in junction with European Association of Cardiothoracic Anaesthesia (EACTA)  Yes  No

**Candidate's requirements**

The candidates must be board certified or board eligible according to European residency programme standards  Yes  No

Language requirements:

Specific requirements towards the attending fellow:

**General Programme Information**

**Aims, goals and objectives of the Fellowship Programme**

- Independent appropriate perioperative patient care in cardiac surgery at high volume university heart center
- Certificate in transoesophageal Echocardiography
- After completion of the programme, they will be able to work independently as consultants in cardiac anaesthesia

**Preferred Duration**  12 months  24 months

\* Of note, the training period should not be interrupted by frequent and/or prolonged periods of secondment to other divisions / departments.

**Preferred Programme Training Start:**  **Programme End:**



**Number of Positions Per Year**

**Type of fellowship training available:**

- Clinical only
- Clinical / Basic Research
- Clinical / Clinical Research
- Basic Research only
- Clinical Research only

**If clinical, will the fellows be allowed to work with the patients under supervision**  Yes  No

**Comments**

**Faculty\***

CTV Anaesthesia Faculty - Research Interest and/or Clinical Expertise. \* Please, list at least three names.

Name	EACTA member	Certification in Cardiothoracic and Vascular Anaesthesia	Additional Qualifications	Email	Contact Address
Johan Winata	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	YES	European Echo Certification	Johan.winata@herzzentrum-dresden.com	See above
Joachim Nicolai	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	YES	European Echo Certification	Joachim.nicolai@herzzentrum-dresden.com	See above
Ties Meyer Jark	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Yes	European Echo Certification		
Click here to enter text.	<input type="checkbox"/> Yes <input type="checkbox"/> No				
Click here to enter text.	<input type="checkbox"/> Yes <input type="checkbox"/> No				
Click here to enter text.	<input type="checkbox"/> Yes <input type="checkbox"/> No				
Click here to enter text.	<input type="checkbox"/> Yes <input type="checkbox"/> No				
Click here to enter text.	<input type="checkbox"/> Yes <input type="checkbox"/> No				
Click here to enter text.	<input type="checkbox"/> Yes <input type="checkbox"/> No				
Click here to enter text.	<input type="checkbox"/> Yes <input type="checkbox"/> No				
Click here to enter text.	<input type="checkbox"/> Yes <input type="checkbox"/> No				

**Publications lists of the faculty's members in PubMed**

See Publication list in the appendix

**Resources**

Check if each of the following is available at the host centre.



Resource	Yes	Number	Working days/week
Total cardiothoracic and vascular ward beds		87	7
Number of ICU beds dedicated to CTVA patients		23	7
Is there an emergency department in which cardiothoracic patients are managed 24 hours a day?	<input checked="" type="checkbox"/>		
An adequately designed and equipped post-anaesthesia care unit for cardiothoracic patients located near the operating room suite?	<input checked="" type="checkbox"/>		
Is there monitoring and advanced life support equipment representative of current levels of technology?	<input checked="" type="checkbox"/>		
Hybrid Operating Rooms	<input checked="" type="checkbox"/>		
Cardiac Operating Rooms	<input checked="" type="checkbox"/>		
Thoracic Operating Rooms	<input type="checkbox"/>		
Vascular Operating Rooms	<input type="checkbox"/>		
Catheterisation Labs	<input checked="" type="checkbox"/>		
Electrophysiology Labs	<input checked="" type="checkbox"/>		
Pulmonology Labs	<input checked="" type="checkbox"/>		
Interventional Vascular Suits	<input checked="" type="checkbox"/>		
Separate CVICU Facility	<input checked="" type="checkbox"/>		
Animal Laboratory for research purposes	<input type="checkbox"/>		
Outpatient Clinic for perioperative evaluation of patients undergoing cardiothoracic and vascular procedures	<input checked="" type="checkbox"/>		
24-hours acute pain service available for patients undergoing cardiac, thoracic and vascular procedures	<input checked="" type="checkbox"/>		
Meeting Rooms	<input checked="" type="checkbox"/>		
Classrooms with visual and other educational aids	<input checked="" type="checkbox"/>		
Study areas for fellows	<input checked="" type="checkbox"/>		
Office space for faculty members and fellows	<input checked="" type="checkbox"/>		
Diagnostic facilities	<input checked="" type="checkbox"/>		
Therapeutic facilities	<input checked="" type="checkbox"/>		
24-hour laboratory services available in the hospital	<input checked="" type="checkbox"/>		
Cardiac stress testing	<input checked="" type="checkbox"/>		
Cardiopulmonary scanning procedures	<input checked="" type="checkbox"/>		
Pulmonary function testing	<input checked="" type="checkbox"/>		
Computers and IT support	<input checked="" type="checkbox"/>		
Appropriate on-call facilities for men and women	<input checked="" type="checkbox"/>		

### Clinical Skills and Responsibilities

Will your Programme offer a 12-24 months of fellowship education in fundamental clinical skills of medicine relevant to the practice of CTVA?  Yes  No

If yes, for each rotation or experience below, specify the duration (in months, four weeks = one month) during the 12-24 months of education in fundamental clinical skills.

#### Caring for inpatients in:

Number of performed produces/year

Cardiac Surgery using CPB	2200
Cardiac Surgery without CPB	850
Minimally-Invasive Cardiac Procedures	200
Interventional Cardiac Catheterization (e.g. TAVI, Mitraclip, ASD..)	680
Electrophysiology Lab (e.g. mapping, ablation, pacemakers, ICDs..)	230
Robotic Cardiac Surgery	0
Heart, Lung, and Heart/Lung Transplants	2
ECLS, ECMO, VAD Procedures	25
Echocardiography Lab	1400



Thoracoscopic Surgery	210
Pulmonary Resection	10
Oesophageal Surgery	0
Tracheo-Bronchial Surgery	0
Interventional Pulmonology Procedures	0
Major Vascular Procedures	40
Neurological monitoring during major vascular surgery	40
Interventional Vascular Procedures	5
Acute and Chronic Pain Management for CTVA patients	2600
Basic Research	
Clinical Research	

**Rotations in:**

Number of performed procedures/year/fellow

Cardiac Anaesthesia	350
Thoracic Anaesthesia	50
Anaesthesia for Major supra-inguinal Vascular Procedures	50
Trans-oesophageal and trans-thoracic echocardiography	350
Medical or surgical Critical Care Rotation	
Inpatient or outpatient cardiology	
Inpatient or outpatient pulmonary medicine	0
Extracorporeal perfusion technology (CPB, ECMO, Nova-Lung.)	10
Paediatric cardiothoracic anaesthesia	0
Basic Research	
Clinical Research	

**Will all fellows entering the CTVA Programme complete each of the fundamental clinical skills of requirements?**  Yes  No

If no, explain.

The cardiac center of Dresden provide cardiac surgery and cardiology with their own intensive care unit, but only for adult patients.

**In the clinical anaesthesia setting, including nights and weekends, will faculty members at any time direct perioperative CTVA care, involving fellows, for more than two anaesthetizing locations simultaneously?**  Yes  No

If Yes, describe:

**Clinical Responsibility:**

Responsibility of the fellow will be to provide safe and effective patient care at an academic level.

**List any other rotations (along with their duration, in months) offered in the Programme to augment fellows' learning.**

Fellowship lecture, Symposia and teaching events in TEE, Dedicated Cardiac Fellow Symposium accredited by the German Society of Anesthesiology and Intensive Care Medicine

~~Will advanced subspecialty rotations reflect increased responsibility and learning opportunities?~~  Yes  No

**Maximum Time in Non-Clinical Activities**

**Financial Statement**

**An employment contract will be signed with the candidate**  Yes  No

**Accommodation options are provided**  Yes  No

**Transportation/travel options are provided**  Yes  No

**Monthly Salary:** Amount

**Currency**

This opportunity is not funded by the centre

Yes  No

**Source of financial support for the candidate:**



- Host centre (monthly salary)  
 Candidate 's centre  
 Scholarship  
 Educational grant  
 Award  
 Candidate's own expenses  
 Others

Please, describe

## Educational and Academic Programme

### Didactic Sessions

- Will faculty members' attendance be monitored?  Yes  No  
 Will fellows' attendance be monitored?  Yes  No  
 Will attendance be mandatory for faculty members?  Yes  No  
 Will attendance be mandatory for fellows?  Yes  No

Who of the following will provide content at conferences? Check all that apply.

Anaesthesiology faculty members from this department	<input checked="" type="checkbox"/>
Anaesthesiology faculty members from other sites	<input checked="" type="checkbox"/>
Non-anaesthesiologists from the primary clinical site	<input checked="" type="checkbox"/>
Non-anaesthesiologists from the participating sites	<input checked="" type="checkbox"/>
Visiting faculty members	<input checked="" type="checkbox"/>
Drug/industry representatives	<input checked="" type="checkbox"/>
Fellows	<input checked="" type="checkbox"/>
Others (specify): cardiac surgery	<input checked="" type="checkbox"/>
Others (specify): cardiology	<input checked="" type="checkbox"/>

### What will be the frequency of the following educational topics in the programme's schedule?

	Weekly	Bi-weekly	Monthly	Quarterly	Semi-annually	Annually
Critical care appraisal of the literature (i.e., journal club)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality improvement (M&M, QA)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Board review (e.g., oral exams, keywords)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grand rounds	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (specify) <a href="#">Click here to enter text.</a>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (specify) <a href="#">Click here to enter text.</a>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Formal Course Work Available in:

Daily conference,

Extra-Institutional Educational Conference Support:

In the Previous 5 Years, Fellows were 1<sup>st</sup> or 2<sup>nd</sup> Author On:

Abstracts

Book Chapters

Peer-Reviewed Journal Articles

Other Publications

Dedicated Research Time:

4h/week

### Patient Care

Competency Area	Settings/Activities	Assessment Method(s)
Following standards for patient care and established guidelines and procedures for patient safety, error reduction, and improved patient outcomes.	Involved in programmes of quality assurance and risk management; daily practice in the OR, preop anesthesia clinic	Providing direct and formative feedback
Pre-operative patient evaluation and optimization of clinical status prior to the cardiothoracic procedure.	Literature, preop anesthesia clinic	Daily conference, Supervision in the OR
Interpretation of cardiovascular and pulmonary diagnostic test data.	Literature, Lectures, preop anesthesia clinic	Daily conference, Supervision in the OR
Hemodynamic and respiratory monitoring.	Literature, Lectures, daily practice and teaching in the OR	Daily Conference, Supervision in the OR
Pharmacological and mechanical hemodynamic support.	Literatures, daily practice and teaching in the OR	Daily Conference, Supervision in the OR
Peri-operative critical care, including ventilatory support and peri-operative pain management.	Intensive care ward rounds, 24h acute pain service,	
Providing anaesthesia care for patients undergoing cardiac surgery with and without extracorporeal circulation.	Literature, Lectures, daily practice and teaching in the OR	Supervision and Evaluation in the OR



Competency Area	Settings/Activities	Assessment Method(s)
Providing anaesthesia care for patients undergoing thoracic surgery, including operations on the lung, oesophagus, and thoracic aorta.		
Advanced-level peri-operative TEE.	Theoretic and practical training (Former Courses, Teaching in the OR, Simulation)	Accreditation in TEE by EACTA
The ability to independently manage intra-aortic balloon counterpulsation and be actively involved in the management of other extracorporeal circulatory assist devices.	Literature, Teaching in the OR	
Management of cardiopulmonary bypass (CPB).	The Fellow rotate for at least 1 week to the perfusion department. The Institute of Cardiac Anesthesiology and the Perfusion Department will held educational events and conferences on bi-monthly basis. The Fellow is responsible for at least 1 case presentation during these clinical conferences.	

### Medical Knowledge

Indicate the activity(ies) (lectures, conferences, journal clubs, clinical teaching rounds, etc.) in which residents will demonstrate knowledge in each of the following areas. Also indicate the method(s) used to assess competence.

Area of Knowledge	Settings/Activities	Assessment Method(s)
How cardiothoracic diseases affect the administration of anaesthesia and life support to adult cardiothoracic patients.	- Lectures - Conference	Daily conference
Embryological development of the cardiothoracic structures.	- Literature - Lectures	
Pathophysiology, pharmacology, and clinical management of patients with cardiac disease, to include cardiomyopathy, heart failure, cardiac tamponade, ischemic heart disease, acquired and congenital valvular heart disease, congenital heart disease, electrophysiologic disturbances, and neoplastic and infectious cardiac diseases.	- Lectures - Literature - Conference - JC -	Daily conference
Pathophysiology, pharmacology, and clinical management of patients with respiratory disease, to include pleural, bronchopulmonary, neoplastic, infectious, and inflammatory diseases.	- Literature - Lectures	
Pathophysiology, pharmacology, and clinical management of patients with thoracic vascular, tracheal, oesophageal, and mediastinal diseases, to include infectious, neoplastic, and inflammatory processes.	- Literature - Lectures	
Non-invasive cardiovascular evaluation, to include electrocardiography, transthoracic echocardiography, TEE, stress testing, and cardiovascular imaging.	- Literature - Lectures - Conference	Daily conference,
Cardiac catheterization procedures and diagnostic interpretation, to include invasive cardiac catheterization procedures, including angioplasty, stenting, and transcatheter laser and mechanical ablations.	- Literature Lectures	Daily conference
Non-invasive pulmonary evaluation, to include pulmonary function tests, blood gas and acid-base analysis, oximetry, capnography, and pulmonary imaging.	- Literature - Lectures	Daily conference
Pre-anaesthetic evaluation and preparation of adult cardiothoracic patients.	- Conference - Clinical teaching rounds	Daily conference
Peri-anaesthetic monitoring, both non-invasive and invasive (intra-arterial, central venous, pulmonary artery, mixed venous saturation, cardiac output)	- Literature - Lectures - Clinical teaching rounds - Teaching in the OR	Daily conference, Supervision in the OR
Pharmacokinetics and pharmacodynamics of medications prescribed for medical management of adult cardiothoracic patients.	- Literature - Lectures	Daily conference
Pharmacokinetics and pharmacodynamics of anaesthetic medications prescribed for cardiothoracic patients.	- Literature - Lectures -	Daily conference
Pharmacokinetics and pharmacodynamics of medications prescribed for management of haemodynamic instability.	- Literature - Lectures -	Daily conference Supervision in the OR



Area of Knowledge	Settings/Activities	Assessment Method(s)
Extracorporeal circulation, to include: myocardial preservation; effects of CPB on pharmacokinetics and pharmacodynamics; cardiothoracic, respiratory, neurological, metabolic, endocrine, haematological, renal, and thermoregulatory effects of CPB; and coagulation/ anticoagulation before, during, and after CPB.	- Lectures - Literature - Teaching in the OR	Daily conference, Supervision in the OR
, Inotropes, chronotropes, vasoconstrictors, and vasodilators.	- Literatures - Lectures	Daily conference
Circulatory assist devices, to include intra-aortic balloon pumps, left and right ventricular assist devices, and extracorporeal membrane oxygenation (ECMO).	- Literatures - Lectures	Daily conference, Supervision in the OR
, Pacemaker insertion and modes of action.	- Literatures - Lectures - Teaching in the OR	Daily conference, Supervision in the OR
, Cardiac surgical procedures, to include: minimally invasive myocardial revascularization; valve repair and replacement; pericardial, neoplastic procedures; and heart and lung transplantation.	- Literatures - Formal Courses	Daily conference
Thoracic aortic surgery, to include: ascending, transverse, and descending aortic surgery with circulatory arrest; CPB employing low flow and or retrograde perfusion; lumbar drain indications and management; and spinal cord protection, including cerebral spinal fluid (CSF) drainage.	- Literatures - Manuals of teaching practice - Lectures - Formal Courses	Daily conference, Supervision in the OR
Oesophageal surgery, to include varices, neoplastic, colon interposition, foreign body, stricture, and tracheoesophageal fistula.	None	
Pulmonary surgery, to include segmentectomy (open or video-assisted), thorascopic or open, lung reduction, bronchopulmonary lavage, one-lung ventilation, lobectomy, pneumonectomy and bronchoscopy, including endoscopic, fiberoptic, rigid, laser resection.	None	
Post-anaesthetic critical care of adult cardiothoracic surgical patients.	- Literatures - Lectures - Clinical Rounds	Daily Ward Round
Peri-operative ventilator management, to include intra-operative anaesthetic s, and critical care unit ventilators and techniques.	- Literatures - Lectures	Daily conference
Pain management of adult cardiothoracic surgical patients.	- Literatures - Lectures	Daily conference
Research methodology/ statistical analysis, the fundamentals of research design and conduct, and the interpretation and presentation of data.	- Literatures - Lectures - Formal Courses - Teaching Rounds - Journal Club	
Quality assurance/ improvement.	- CIRS-System - M&M Conference	
Ethical and legal issues, and practice management.	- Conference	

### Evaluation of Trainees

1. The Programme Director will give an appraisal for each fellow every 6 months.  Yes  No
2. The faculty and trainee should agree a joint evaluation both fellow's progress and the training programme, and devise a plan for addressing any perceived difficulties or deficiencies.  Yes  No
3. Training programmes should encourage fellows to provide a written confidential evaluation of the programme.  Yes  No
4. The centre will be able to maintain a register of those fellows who have entered and successfully completed a training programme in order to continue its accreditation as a training centre.  Yes  No
5. At the end of the training period, the centre would acknowledge in writing successful completion of a fellow training.  Yes  No

### Practice-based Learning and Improvement

1. Briefly describe one planned learning activity in which fellows engage to: identify strengths, deficiencies, and limits in their knowledge and expertise (self-reflection and self-assessment); set learning and improvement goals; and identify and perform appropriate learning activities to achieve self-identified goals (life-long learning).

The fellows are going to demonstrate an anesthesia activity, for example an anesthesia induction for a aortocoronary bypass patient. After the case, the supervisor and the fellow fill in together an assessment about the performance (Selfassessment included) and identify deficiencies and limits.



Plan: 4x/Fellowship

2. Briefly describe one planned quality improvement activity or project that will allow the fellows to demonstrate an ability to analyse, improve and change practice or patient care. Describe planning, implementation, evaluation and provisions of faculty support and supervision that will guide this process.

The fellow's progress will be evaluated and discussed with the fellow every 3 to 6 months by the programme director. The fellow's professional attitude, fund of knowledge, clinical judgment will be assessed as well his/her practical skills, social competence and efficiency for patient management and critical analysis of any relevant clinical situation.

3. Briefly describe how fellows will receive and incorporate formative evaluation feedback into daily practice.

The fellow will get 1:1 Supervision with a senior cardiac consultant. At the end of the case, they 'll meet for a couple of minutes and the fellow will receive a short feedback.

4. Briefly describe one example of a learning activity in which fellows engage to develop the skills needed to use information technology to locate, appraise, and assimilate evidence from scientific studies and apply it to their patients' health problems. The description should include:

The fellow will plan and demonstrate a clinical case at the conference. So, he/she has to do a literature research first and use information technology for that.  
Further, the fellow has the opportunity to collaborate in clinical research or academic projects.

5. Briefly describe how fellows will participate in the education of patients, families, students, fellows, and other health professionals.

The fellow will participate at the preop anesthesia clinic and will have to inform the patient and families about the anesthesia and the complication.  
Further, in the clinical practice, the fellow often has to educate students or residents.

### Interpersonal and Communication Skills

1. Briefly describe one learning activity in which fellows demonstrate competence in communicating effectively with patients and families across a broad range of socioeconomic and cultural backgrounds, and with physicians, other health professionals, and health-related agencies.

In the preop anesthesia clinic, the fellow will always have to communicate with patients with different backgrounds.  
During the Operation, the fellow will be supervised while communicating with the surgeon, the perfusionist and the nurses.

2. Briefly describe one learning activity in which fellows demonstrate their skills and habits to work effectively as members or leaders of a health care team or other professional group. In the example, identify the members of the team, responsibilities of the team members, and how team members communicate to accomplish responsibilities.

The fellow will be part of an anesthesia team, which has to provide safe anesthesia for the patient. So, at the beginning, the fellow will be a member and over time, he'll be the leader of an anesthesia team of 2-3people.

3. Briefly describe how fellows will be provided with opportunities to act in a consultative role to other physicians and health professionals related to clinical information systems.

Daily, weekly and monthly the fellow is responsible for difficult airway problems. If there is a difficult airway problem on the intensive care unit, the fellow will be in a consultative role.

4. Briefly describe how fellows will be provided with opportunities to maintain comprehensive, timely, and legible medical records, if applicable.

The fellow will be taught to fill in the anesthesia protocol by nurses. The fellow is responsible for the documentation of the cases and TEE examinations done during his fellowship.

5. Briefly describe how fellows will maintain a comprehensive anaesthesia record for each patient, including evidence of pre- and post-operative anaesthesia assessment, an ongoing reflection of the drugs administered, the monitoring employed, the techniques used, the physiologic variations observed, the therapy provided as required, and the fluids administered.

The fellow has to fill in a preoperative anesthesia assessment in the preop anesthesia clinic, which will be discussed at the conference. For the intraoperative record, the fellow has to fill in the anesthesia protocol and the documentation of the TEE examination.

6. Briefly describe how fellows will create and sustain a therapeutic relationship with patients, engage in active listening, provide information using appropriate language, ask clear questions, provide an opportunity for comments and questions, and demonstrate sensitivity and responsiveness to cultural differences, including awareness of their own and their patients' cultural perspectives.

The fellow will be part of the preop anesthesia clinic and and perform preoperative conversations to get informed consent.







# UNIVERSITÄTSMEDIZIN DRESDEN

Universitätsklinikum  
Carl Gustav Carus



Herzzentrum  
Dresden



## *Cardiothoracic and Vascular Anaesthesia*

### *Fellowship Programme Dresden*

PD Dr. med. habil. Jens Fassl, FASE

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## Period and Aims of the Fellowship

The Cardiothoracic and Vascular Anaesthesia Fellowship at the Institute of Cardiac Anaesthesiology of the Heart Center Dresden is offered for a duration of one year. Aim of the Fellowship Programme is to train anaesthesiologists who have finished their residency training to become proficient in cardiothoracic and vascular anaesthesia. The fellows will have the opportunity to gain profound experience in the fields of cardiac, thoracic and vascular anaesthesia. After completion of the programme, they will be able to work independently as consultants in cardiac, thoracic and vascular anaesthesia.

The fellowship programme in Dresden is organised and directed by the chair of the Institute of Cardiac Anaesthesiology, PD Dr. Jens Fassl and programme director Torsten Schmidt. Completion of the programme will be acknowledged by a joint certificate of the European Association of Echocardiography (EACTA) and the Heart Center Dresden, Institute of Cardiac Anaesthesiology. One person per year can start the fellowship programme every year.

## Obligation of the Fellow

The Programme includes pre-, intra- and postoperative care of patients undergoing a cardiac, vascular or thoracic operation. The Fellow takes part in the clinical routine as well as in clinical conferences with the Department of Cardiology and the Department of Cardiac Surgery. The fellow is trained in transesophageal echocardiography by formal courses and teaching in the operating room. The fellow takes part in preparation and presentation of case conferences. The didactic curriculum provided through lectures and conferences and allows the fellow to acquire the knowledge to care for the patients. In addition, academic projects including preparation and publication of review articles, book chapters, manuals for teaching or clinical practice, clinical research or other academic activities are offered. The fellow is responsible for the documentation of the cases and TEE examinations done during the fellowship.



## Evaluation

The fellow's progress will be evaluated and discussed with the fellow every 3 months by the chair and the programme director. The fellow's professional attitude, fund of knowledge, clinical judgment will be assessed his/her practical skills, social competence and efficiency as well for patient management and critical analysis of any relevant clinical situations. The fellow is involved in programmes of quality assurance and risk management. At the end of the training period, the fellow will receive a testimonial.

## Faculty

The chair and the programme director have a large experience in cardiothoracic and vascular anaesthesia. Both devotes sufficient time to provide substantial leadership to the programme and supervision for the trainees. PD Dr. Fassel and Torsten Schmidt are the primary coaches of the fellow; further senior members of the anaesthesia team serve as clinical teachers and coaches for the fellows in daily clinical practice. The Faculty of the Institute of Cardiac Anaesthesiologists consists of 5 consultants and 6 specialists, who are specially trained in cardiothoracic and vascular anaesthesia as well as in perioperative transesophageal echocardiography.

## Resources

The Heart Center Dresden is the exclusive cardiac surgical centre in Dresden and one of two centers in Saxony, a region with a population of approximately 4.1 million people. There exists a high level of medical care with an twenty-four-seven emergency department, operating rooms, Cath labs, Cardio-CT and Cardio MRI which are all adequately designed and equipped for the management of cardiothoracic and vascular surgery patients and intensive care units for surgical (22 beds) and cardiology patients (19 beds). Staff physicians are all board certified in their medical specialty and have profound experience in cardiovascular and pulmonary disease, echocardiography including transesophageal echo, clinical cardiac electrophysiology and cardiac, thoracic and major vascular surgery. The monitoring and advanced life support equipment is representative of current levels of technology. There are facilities which are readily available at all times to provide prompt laboratory measurement pertinent to the care of cardiothoracic and vascular surgical patients as well as prompt non- invasive and invasive diagnostic and therapeutic cardiothoracic procedures. These include but are not limited to echocardiography, cardiac stress testing, cardiac catheterization, electrophysiological testing and therapeutic intervention, cardiopulmonary scanning procedures and pulmonary function testing.



## Cardiac Surgery

The Department of Cardiac Surgery at the Heart Center of the Technical University of Dresden performed 2252 adult cardiac procedures in 2018. Details are provided in table 1.

Table 1

Leistungsbereich 2018	Jan	Feb	Mrz	Apr	Mai	Jun	Jul	Aug	Sep	Okt	Nov	Dez
Bypass	72	49	53	45	60	58	62	62	42	54	62	52
Klappenchirurgie	62	85	68	79	62	66	65	66	66	68	66	36
Kombinationseingriff	32	32	26	28	27	32	32	28	30	27	35	15
Plastische Rekonstruktion des Herzseptums			2		2			1	2			
Resektion und Ersatz an der Aorta	4	5	3	4	4	2	3	2	3	8	4	3
HSM/ Defi- Eingriff	28	19	22	16	21	32	15	29	28	21	29	21
Transplantation					1			1				
Herzunterstützungssystem	2		4		2	1				1	1	2
sonstiges	2	6	7	4	3	2	3	4	4	5	1	
Fremd-OP	3	2	4	4	5	3	3	1		3	7	
Neurostimulator (BaroStim)	3	3	3	4		2	3	2	3		1	
<b>Zwischensumme</b>	<b>208</b>	<b>201</b>	<b>192</b>	<b>184</b>	<b>187</b>	<b>198</b>	<b>188</b>	<b>196</b>	<b>176</b>	<b>187</b>	<b>206</b>	<b>129</b>
Rethorakotomie	3	11	7	8	11	9	10	14	14	9	20	5
Behandlung von WHST	14	22	25	15	13	23	18	41	23	29	33	30

## Interventional Cardiology

The Department of Cardiology at the Heart Center Dresden is an academic part of the University Hospital also covers the interventional cardiology theatre. The fellow is involved and trained in these procedures. . Details are provided in table 2.

Table 2.

	2017	2018
PTCA / Stents	825	1149
Invasive Diagnostic	515	805
Misc	131	215
Heart Valve Procedures	6	5
Vascular Interventions	42	55
Conservative Treatment	1391	1405
Intensive Care medicine	248	264
Pacemaker / AICD	548	722
Minimal invasive Treatments (TAVI, MitraClip, Aortic Prosthesis)	237	346
Ablation	777	640
Misc. Procedures	171	167



## Anaesthesia

### *Cardiac Anaesthesia*

Fellows are trained to provide perioperative anaesthetic management for patients with severe cardiopulmonary pathology. The cardiac surgeries are the following: coronary artery bypass surgery (CABG) both on cardiopulmonary bypass as well as on a beating heart, heart valve surgery, aortic reconstruction requiring deep hypothermic arrest, thoracic aortic aneurysm repair, aortic dissection repair and heart transplants. (Table 1).

Adequate exposure and experience is provided in the management of adult patients for cardiac pacemaker and automatic implantable cardiac defibrillator placement and surgical treatment of cardiac arrhythmias. There is exposure also to techniques such as percutaneous aortic valve replacement, mitral valve intervention and aortic valve bypass.

Fellows also gain experience in perioperative medical (anaesthetic) management of the cardiac patient, including management of intra-aortic balloon pumps (IABP) and ventricular assist devices (VAD), post-operative ICU care, point-of-care coagulation testing, blood transfusion medicine, electrophysiology, and transthoracic echocardiography.

Fellows will receive proper theoretical and practical training both for basic and advanced TEE. Each patient undergoing cardiac surgery will have a pre- as well as a postsurgical transesophageal examination. The fellow will perform and document the TEE examinations with increasing independence and review each examination with a senior echocardiographer.

The TEE training will be based on the understanding of the basic principles of ultrasound and learning of basic skills of TEE (physics, standard views for examination, Doppler principles and quantification etc). As soon as the fellows master the basic skills, TEE training will continue with advanced applications of intraoperative TEE including assessment of valvular function, 3D, AQ for assessment of ventricular function, Stress and Strain, Tissue Doppler). The fellowship will give fellows an ideal training to qualify for accreditation in TEE by the European Association of Echocardiography (EAE) and the European Association of Cardiothoracic Anaesthesiology (EACTA). Mentors of the fellows are trained and accredited experts in TEE and have a large experience in teaching TEE and performing clinical echocardiographic research projects.

### *Thoracic and Vascular Anaesthesia*

Clinical work of fellows includes anaesthetic management of adult patients undergoing thoracic and vascular surgery. Fellows are trained to manage different types of thoracic surgeries. Fellows achieve expertise in different techniques of lung isolation and ventilation, including the use of double-lumen endotracheal tubes, bronchial blockers, fiberoptic bronchoscopy, and jet ventilation.



### *Advanced Monitoring and Invasive Techniques*

The complex nature of cardiothoracic surgery necessitates extra training to acquire the skills needed to be a cardiothoracic and vascular anaesthesia consultant. Fellows are trained to achieve expertise in the advanced monitoring techniques including invasive blood pressure measurement, arterial blood gas analysis, cardiac output monitoring, central venous oxygen saturation, jugular venous oxygen saturation, Bispectral Index (BIS) and near infrared spectroscopy (NIRS).

Finally, invasive procedures completed by the cardiothoracic anaesthesiology fellows include arterial line placement (femoral, axillary, brachial, radial), central venous cannulation (internal jugular, subclavian, femoral), pulmonary artery catheter placement, transvenous pacemaker placement, thoracic epidural analgesia, fiberoptic endotracheal tube placement, 2D/3D transesophageal echocardiography and ultrasound guidance of vascular access.

### **Structure of the Fellowship Programme**

#### **1<sup>st</sup> Month**

- Familiarisation in cardiothoracic and vascular anesthesia, coached mainly by the programme director or chair.
- Anaesthesia management for standard cardiac procedures.
- Daily participation intensive care ward rounds and preop anesthesia clinic.

#### **2<sup>nd</sup> - 4<sup>th</sup> Month**

- Clinical duties as a member of the cardiac team for standard cardiac procedures (isolated CABG, aortic and mitral valve replacement), under supervision.
- Daily participation intensive care ward rounds and preop anaesthesia clinic - Acquisition of basic echocardiographic knowledge (books, media, course, teaching in the operating theatre).
- On – call duties, under supervision.
- Evaluation of the educational progress of the fellow by programme director and the chair. Meeting with the fellow, discussion of the evaluation, mutual feedback.
- Planning of participation in a national or international conference. Participation in the Annual Meeting of EACTA with an oral presentation or abstract.

#### **5<sup>th</sup> – 7<sup>th</sup> Month**

- Clinical duties as a member of the cardiac team for standard and advanced cardiac procedures, including transcatheter aortic valve implantation (transapical / transfemoral), anterolateral mitral valve repairs / replacements), under supervision.



- Daily participation intensive care ward rounds and preop anaesthesia clinic.
- Acquisition of basic TEE skills. The fellow learns to obtain the 20 standard views.
- Planning and presentation of clinical case conference.
- On – call duties, under supervision.

### **8th – 10th Month**

- Clinical duties as a member of the cardiac team for standard and advanced cardiac procedures including transcatheter aortic valve implantation (transapical / transfemoral), aortic valve bypass and antero-lateral mitral valve repairs / replacements, under supervision.
- Daily participation intensive care ward rounds and preop anaesthesia clinic.
- Self-consistent TEE examination (Pre - and postoperatively) under bedside Supervision.
- On – call duties, under supervision.

### **Starting 11<sup>th</sup> to 12<sup>th</sup> Month**

- Self-consistent clinical duties as junior cardiac specialist in elective cardiac, thoracic and vascular surgical patients.
- Self-consistent TEE examination.
- On – call duties as a junior consultant, together with a backup senior consultant.
- European accreditation in TEE by EACTA / EAE (or shortly after the end of the fellowship).
- Continuous medical education in the field of cardiac, thoracic and vascular anaesthesia.