

OPEN MEDICAL INSTITUTE

CARDIAC SURGERY

SEMINAR REPORT 2019

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SALZBURG CLEVELAND CLINIC SEMINAR CARDIAC SURGERY

June 2 - 8, 2019

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| • 30 fellows from 23 different countries and regions |
| • 8 faculty members from the United States and Austria |
| • 19 lectures, 1 CPB machine & perfusion emergencies workshop, 1 wet lab & correlation with TEE workshop and 1 case presentation session given by faculty |
| • 30 interesting case presentations by fellows |
| • 6 excellent case presentations selected by faculty |

Faculty Photo (L-R)

Patrick M. Grady, CCP; Patrick R. Vargo, MD; Tara Karamlou, MD, MSc and Nikolaos (Nick) Skubas, MD, DSc, FASE, FACC (Co-Course Director)
not pictured: Guenther Laufer, MD (Co-Course Director); Marek P. Ehrlich, MD;
Alfred Kocher, MD and Dominik Wiedemann, MD



Group Photo of Faculty and Fellows



2019 Salzburg Cleveland Clinic Seminar in Cardiac Surgery
Sunday 2 June - Saturday 8 June 2019



		Sunday 02.06.2019	Monday 03.06.2019	Tuesday 04.06.2019	Wednesday 05.06.2019	Thursday 06.06.2019	Friday 07.06.2019	Saturday 08.06.2019		
07:00	08:00		BREAKFAST	BREAKFAST	BREAKFAST	BREAKFAST	BREAKFAST	DEPARTURES		
08:00	09:00		Introductions Pre-Seminar Test	AV Repair Patrick R. Vargo, MD	Complex AV and Aortic Procedures Patrick R. Vargo, MD	Optimal Strategies in Total Arch Replacement Marek P. Ehrlich, MD	Functional MR: Functional Anatomy of the Mitral Valve Alfred Kocher, MD			
09:00	10:00		Valve Endocarditis and Redo Surgery Tara Karamlou, MD	Myocardial Preservation: Techniques and Choices Patrick M. Grady, CCP	SAVR vs TAVR Dominik Wiedemann, MD	Evaluation of Prosthetic Heart Valves Nikolaos Skubas, MD, DSc, FASE, FACC	Mechanical vs Tissue Valve: From Guidelines to Clinical Practice Alfred Kocher, MD			
10:00	10:30		COFFEE BREAK	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK			
10:30	11:30		Cardiovascular Physiology & Pharmacology Nikolaos Skubas, MD, DSc, FASE, FACC	Cardiac Anesthesia: A Primer for Surgeons Nikolaos Skubas, MD, DSc, FASE, FACC	Prosthetic Heart Valve Choices Tara Karamlou, MD	Inotropes, IABP, ECMO, and Impella for Postcardiotomy Ventricular Dysfunction Nikolaos Skubas, MD, DSc, FASE, FACC	Papillary Muscle Techniques for Functional Mitral Regurgitation Guenther Laufer, MD			
11:30	12:30		AVR for AS Dominik Wiedemann, MD	CABG Patrick R. Vargo, MD	How to Perform a Bentall Operation Marek P. Ehrlich, MD	Mentoring/ Teaching in Surgery Alfred Kocher, MD	Progress of Surgical Aortic Valve Replacement: Recent Achievements Guenther Laufer, MD			
12:30	14:00		LUNCH	LUNCH	LUNCH	LUNCH	LUNCH			
14:00	15:00		Workshop 1: The CPB Machine & Perfusion Emergencies Patrick M. Grady, CCP	Workshop 2: Wet Lab & Correlation with TEE Nikolaos Skubas, MD, DSc, FASE, FACC Patrick R. Vargo, MD Tara Karamlou, MD Dominik Wiedemann, MD	Workshop Fellows' Case Presentations Patrick R. Vargo, MD Marek P. Ehrlich, MD Tara Karamlou, MD	Workshop Fellows' Case Presentations Alfred Kocher, MD	Post-Seminar Test Evaluation & Discussion			
15:00	16:00									
16:00	17:00						Workshop Case Presentations by Faculty to Fellows/ How to Present a Case Tara Karamlou, MD			
17:00	18:00		<i>17:00 - 17:15</i> OMI/AAF PRESENTATION							
18:00	19:00	FACULTY MEETING TO REVIEW THE WEEK					FAREWELL RECEPTION			
19:00	20:00	WELCOME RECEPTION & DINNER	DINNER	DINNER FACULTY DINNER IN PRIVATE HOME	DINNER	DINNER	GRADUATION DINNER Certificates Awarded			
20:00	21:00									

**CLEVELAND CLINIC
SEMINAR
in
SALZBURG**

"Cardiac Surgery"

June 2 – 8, 2019

FACULTY



Wolfgang Aulitzky, MD is the Medical Director of the American Austrian Foundation. He is Associate Dean for International Medicine and Distance Learning, Adjunct Prof. of Clinical Urology and Adjunct Prof. of Clinical Reproductive Medicine at the Weill Medical College of Cornell University/New York Presbyterian Hospital. In 2016, he was appointed Adjunct Professor of Pediatrics in the Associated Faculty of the Perelman School of Medicine at the Children's Hospital of Philadelphia. He is also Associate Prof. of Urology at the Medical University of Innsbruck and Visiting Professor at the Medical University of Vienna. Amongst others he is a member of the American, German and Austrian Societies of Urology and was awarded the Zuckerkindpreis of the Austrian Society of Urology in 1989. In 1995 he received the Silver Medal, in 2007 the Golden Medal for Merits to the Republic of Austria and in 2014 the cross of honor of the Land Salzburg. As Director of the Medical Program of the American Austrian Foundation he has initiated the Open Medical Institute, a scientific and educational collaboration of Weill Cornell and the New York Presbyterian Hospital, the Children Hospital of Philadelphia, Duke University, Columbia University, the Cleveland Clinic and leading hospitals in Austria. Dr. Aulitzky earned his medical degree at the University of Innsbruck in 1977, was a research associate at the University of Uppsala, Sweden and the Rockefeller University, New York. He received his training as an urologist at the University of Innsbruck and the General Hospital of Salzburg. He is the author of more than 140 publications on Urology, Andrology and Health Care issues and is co-author of books on basic and clinical urology/andrology.

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Edward G. Soltesz, MD, MPH (Course Director) is a Surgeon in the Department of Thoracic and Cardiovascular Surgery at the Cleveland Clinic. He is board certified by the American Board of Surgery and American Board of Thoracic Surgery in general and cardiothoracic surgery. Dr. Soltesz specializes in adult cardiac surgery, minimally invasive cardiac surgery, valve repair and replacement, endovascular aortic surgery, percutaneous approaches to valve replacement, and complex re-operative heart surgery and heart transplant and mechanical support. A native of Cleveland, Dr. Soltesz graduated as valedictorian of St. Ignatius High School in Cleveland and received a full academic scholarship to the College of the Holy Cross. There, he obtained degrees in both Classics and Chemistry, was awarded the British Marshall Scholarship, and graduated summa cum laude as the class valedictorian. Dr. Soltesz then went on to receive his medical degree from Harvard Medical School where he was awarded the Harvard National Scholarship. Dr. Soltesz stayed at Harvard to complete his residencies in general surgery and cardiothoracic surgery at the Brigham and Women's Hospital in Boston. He was awarded the Mannick Research Award for his NIH-funded research in cardiothoracic imaging and is the author of several peer-reviewed scientific manuscripts in this area. During this time at Harvard, Dr. Soltesz also earned a Master of Public Health from Harvard University School of Public Health with a focus on clinical effectiveness. Dr. Soltesz then returned to Cleveland to complete an additional fellowship in complex aortic and endovascular surgery at the Cleveland Clinic where he was subsequently appointed to the Department of Thoracic and Cardiovascular Surgery in 2008. Dr. Soltesz is the author of numerous articles in the areas of minimally invasive valve surgery, optical imaging in cardiac surgery, near-infrared fluorescence imaging, and complex valve surgery.

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Nikolaos (Nick) Skubas, MD, DSc, FASE, FACC (Co-Course Director) is a cardiovascular and thoracic anesthesiologist, who is also specialized in transesophageal echocardiography. Dr. Skubas grew up in Greece and completed his undergraduate studies at Aristoteles University School of Medicine in Thessaloniki, Greece. He completed his anesthesiology residency at University Hospitals (Case Western Reserve University) in Cleveland. His fellowship training in cardiothoracic anesthesia was at Barnes-Jewish Hospital (Washington University in St Louis). Dr. Skubas' research interests include clinical applications of perioperative ultrasound and transesophageal echocardiography. Recent publications include research on transcatheter aortic valve and ventricular physiology. He has been a co-author of the 2014 AHA/ACCF Valve Disease Guidelines and 2018 ASE Guidelines for Evaluation of Valvular Regurgitation. He is the Executive Section Editor on Perioperative Transesophageal Echocardiography and Cardiovascular Education in Anesthesia and Analgesia, the official journal of the Society of Cardiovascular Anesthesiologists, and an associate Editor in Anesthesiology. He is the Chair of Training and Certification Committee of the American Society of Echocardiography and Board Director of the Society of Cardiothoracic Anesthesiologists. Dr. Skubas is the Chairman of Cardiothoracic Anesthesiology at Cleveland Clinic, Cleveland, Ohio. He lives in Cleveland with his wife and their three children.

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Guenther Laufer, MD (Co-Course Director) is currently the Director of the Department of Cardiac Surgery at the University of Vienna, a position that he has held since 2009. Dr. Laufer graduated from the Medical University of Vienna in 1982, where he also went on to complete his residency in surgery in 1989. From 1992 to 2000, he was the program director of the Heart and Heart-Lung Transplant Program at the University of Vienna before moving to Innsbruck to become a professor and the Chief of the Department of Cardiac Surgery at the University of Innsbruck (2000 - 2009). Dr. Laufer is also a member of several professional associations. He is a member of the Eurotransplant International Foundation (ETI), the Eurotransplant Thoracic Advisory Committee (ThAC) (which he has chaired since 2000), and he has been a board member of the Austrian Society for Surgery since 2002. Additionally, he served as the President of the Austrian Society of Surgery from 2006 to 2008, and is currently the chairperson of the Eurotransplant Assembly.

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Marek P. Ehrlich, MD is a native of Austria, and studied medicine at the University of Vienna. He completed his medical training as a resident in general surgery and cardiac surgery at the University Hospital in Vienna and also held a fellowship as a postdoctoral chief research fellow at the Mount Sinai Hospital in New York. Dr. Ehrlich is currently an Associate Professor of Cardiac Surgery, attending physician and Director of the Aortic as well as Atrial Fibrillation Program at the University of Vienna. His surgical portfolio involves a full spectrum of cardiac as well as vascular procedures including thoracoabdominal repair and minimal invasive aortic valve and ascending aortic replacements. He is also performing all sorts of ablation procedures for atrial fibrillation. His total number of surgical operations exceeds 2500 cases including electrophysiological interventions such as pacemaker und defibrillator implantations. Dr. Ehrlich's research interests have included experimental studies concerning cerebral protection in an animal model. His current research interests include surface mapping in atrial fibrillation as well as new endovascular devices for aortic aneurysms. Moreover, Dr. Ehrlich has served as a faculty member in several international symposia, is a reviewer of the Journal of Thoracic and Cardiovascular Surgery, Circulation and the Annals of Thoracic Surgery. Furthermore, he is the organizer of the "VISAR" symposium which takes place biannually in Vienna. Dr. Ehrlich is the author and coauthor of over 200 articles, abstracts and book chapters published in leading scientific journals.

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Patrick M. Grady, CCP is the Director of Perfusion Services at Cleveland Clinic, the #1 Heart Center in the United States for 24 years. He graduated from Duquesne University in Pittsburgh, Pennsylvania. Perfusion training was received throughout Pittsburgh at the University of Pittsburgh Medical Center, Allegheny General Hospital, Mercy Hospital and Western Pennsylvania Hospital. He completed his pediatric perfusion training at Columbus Children's Hospital in Columbus, Ohio. Upon graduation, Patrick was employed as a Staff Perfusionist at Hamot Medical Center in Erie Pennsylvania before joining the perfusion staff at Cleveland Clinic in 1998. He accepted his current position as Director of Perfusion Services in 2011 Patrick also oversees and is a clinical instructor for the Cleveland Clinic School of Cardiovascular Perfusion as well as a Presenter, Faculty Member and Wet Lab Coordinator for several organizations, including AmSECT, CREF and The Society of Thoracic Surgeons. Patrick has also authored or co-authored various research papers. He lives in Cleveland Ohio with his wife Shelly and children Kirstin, Kaitlin and Collin.

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Tara Karamlou, MD, MSc is a congenital heart surgeon in the Heart and Vascular Institute at the Cleveland Clinic, and the current Director of Research and Education. Dr. Karamlou is also involved with the clinical and translational research activities within the HVI. She is also involved with resident education and will be the Program Director of the newly initiated ACGME-accredited congenital heart surgery fellowship program, which is anticipated to begin in 2020. She graduated from Baylor College of Medicine with High Honor, Alpha Omega Alpha, and then completed her general surgery residency and cardiothoracic surgery residency at Oregon Health Sciences University and the University of Michigan. She was selected as the Nina Braunwald research fellow by the TSFRE and also as the 2nd Kirklin-Ashburn fellow with the Congenital Heart Surgeons' Society at SickKids Hospital in Toronto, ON. She received her Masters' degree in biostatistics from the University of Toronto during this clinical research fellowship. She then completed an ACGME-accredited fellowship at Seattle Children's Hospital in congenital cardiac surgery. Following her training, she was recruited to the University of California, San Francisco, where she developed a busy clinical practice, and expanded her research and educational activities. Her current clinical areas of interest are focused on single ventricle management, tetralogy of Fallot, and complex valve reconstructions. From an academic perspective, she is currently involved in several national, multi-institutional research projects focused on clinical outcomes in congenital heart disease and has published 123 peer-reviewed publications and has presented at hundreds of national and international meetings. She is currently an associate statistical editor for the Journal of Thoracic and Cardiovascular Surgery, and a member of the editorial board of the Annals of Thoracic Surgery. Over the past 5 years, she has been a member of several national quality-improvement and database task-forces, most recently dedicated to establishing transparency and equitable public reporting for pediatric cardiac surgery programs. Her major research interests, supported by several funding sources over the past 12 years, are concentrated on understanding the primary drivers of important national metrics in congenital heart surgery, and ongoing quality assessment in the congenital heart surgery population.

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Alfred Kocher, MD is a cardiac surgeon who covers the entire spectrum of adult cardiac surgery ranging from coronary artery bypass grafting to cardiac transplantation. He specializes in surgical treatment of heart valve disease with a focus on the ROSS procedure, Tirone David operation and novel heart valve devices. Dr. Kocher graduated from Vienna University School of Medicine and completed his surgical residency at the Medical University of Vienna. His fellowship training was at the General Hospital in Vienna with Prof. Wolner and at the Silesian University in Zabrze/Poland with Prof. Zembala. He spent 4 years as attending in cardiac surgery at the University of Innsbruck in Tyrol. Dr. Kocher's research interests include cardiac transplantation, myocardial regeneration by the use of stem cells and clinical trials testing novel devices for heart valve repair and replacement. He has been to Stanford University in 1996 to study heterotopic cardiac transplantation in a rodent model and went to Columbia University in New York where he spent 2 ½ years on stem cell research. His publication on "improvement of myocardial function after infarction by application of CD34+ stem cells" has become a citation classic. Recent publications include a report on a multicenter trial with a rapid deployment aortic valve replacement system in the Journal of Thoracic and Cardiovascular Surgery. He is a peer reviewer for multiple major surgical journals. Dr. Kocher's research efforts have earned him several grants and prizes. In 2015, Dr. Kocher received the OMI-Award for his dedication as a long-time mentor who has donated his time, expertise and energy to OMI Observers. Dr. Kocher is currently on the faculty of the Department of Cardiac Surgery at the Medical University Vienna as Associate Professor of Surgery. He lives in Vienna with his wife Andrea and daughters Valentina and Sophia.

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Patrick R. Vargo, MD is a surgeon in the Department of Thoracic and Cardiovascular Surgery at the Cleveland Clinic. His specialty interests include adult cardiac surgery, aortic and endovascular surgery. Dr. Vargo first attended Xavier University on scholarship where he graduated with highest distinction in Biology. He went on to earn his degree in medicine from Case Western Reserve University School of Medicine and graduated with honors. He stayed in Cleveland and completed his surgical training in Cardiothoracic Surgery at the Cleveland Clinic where he was appointed to staff in 2019. Dr. Vargo is the author of articles in the areas of aortic and endovascular surgery, heart failure and transplantation, and population-based outcomes research. Dr. Vargo lives in Cleveland together with his wife Nika and two children Josie and Nick.

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Dominik Wiedemann, MD is a cardiac surgeon who specializes in surgical treatment of heart failure as well as minimally invasive cardiac surgery. Dr. Wiedemann grew up in the Tirol / Austria. He studied Medicine at Innsbruck Medical University with an elective rotation at the University of Oxford, England, UK. He graduated from Innsbruck Medical University in 2007. Consecutively he started his cardiac surgical residency at the University Clinic of Cardiac Surgery in Innsbruck. After 3 years of residency he moved to Vienna in order to complete his training there in 2013, when he became a board certified cardiac surgeon. Since that time he is attending cardiac surgeon at the Vienna General hospital and head of the Intermediate Care Ward. In 2015 he completed the "Venia docendi" in order to achieve his PD degree. After being Assistant Professor from 2013 to 2016, he became Associate Professor of surgery. 2017 Dr. Wiedemann achieved the additional board certification in Vascular surgery. Apart from his clinical career Dr. Wiedemann is also a rather active researcher focusing on clinical research (mechanical circulatory support, valve surgery, aneurysm surgery, minimal invasive cardiac surgery) as well as on experimental research (ischemia reperfusion injury, neointimal hyperplasia and myocardial regeneration). Dr. Wiedemann lives in Vienna together with his partner Melissa.

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FELLOWS

Fellow Booklet 688SCLS19 Cardiac Surgery



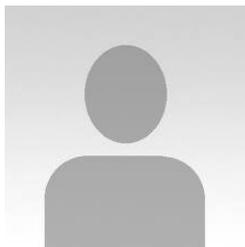
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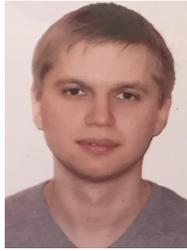
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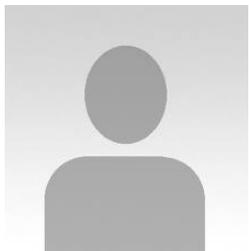
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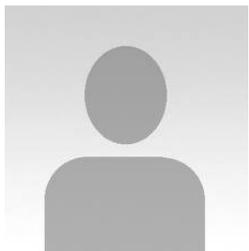
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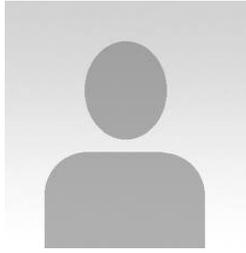
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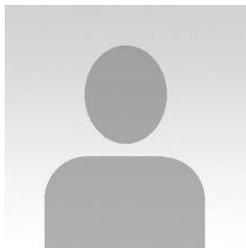
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SEMINAR DIARY FROM FELLOW

Anze Djordjevic, MD
University Medical Center Maribor
Maribor, Slovenia
June 1 - 8, 2019



June 2, Sunday evening. After a 4 hours of drive from Maribor, I arrived to Salzburg right on the brink of start of the seminar. Rushing through the last kilometers of the city, I was already preparing my excuse about being late on arrival. Thankfully, I reached the castle Arenberg on time. It caught my eye right away and I had a good feeling about the upcoming seminar from the first moment I saw the place and the smiling faces of other fellows and faculty members. We got to know each other during dinner and had a lovely conversation that lasted into the night.

June 3, Monday. First “serious” day of the seminar. After breakfast, a pre-seminar test was waiting for us to show our knowledge and to see in which direction and depth the topics are going to go in the next five days. The questions were not so difficult, yet some were a bit unclear and could trigger a potential discussion. Which is good, I presume. The first topic on the agenda was valve endocarditis and redo surgery, excellently presented by Dr. Karamlou. After being warned about the pitfalls in repeating thoracic access in which ever manner as well as getting to know the crucial characteristics in prosthetic and native valve endocarditis, we moved on to cardiovascular physiology, brought to us by Dr. Skubas. Even though this is a surgical seminar, his lecture was priceless due to the way of thinking about our common cardiovascular patient (normal BP means nothing, normal CVP means nothing and others). Aortic valve replacement for aortic stenosis was the next topic, carried out by Dr. Wiedemann. Different accesses were debated, as well as the everlasting fight for existence between mechanical and bioprosthetic valves. After a well-deserved lunch, we headed to the world of cardiovascular perfusion and the heart-lung machine. A very thorough overview of assembling the circuit and managing of perfusion emergencies was prepared by Mr. Grady. The stage was opened again for Dr. Karamlou, who taught us some very important lessons about case presentations and how to achieve maximal audience attention. After dinner, we went for a stroll to a nearby bar, where we exchanged ideas from the first day and agreed that we are all looking very much forward to the days ahead of us.

June 4, Tuesday. It started with a lecture on aortic valve repair, given by Dr. Vargo. The CLASS (commisures, leaflets, annulus, sinuses, sinotubular junction) mnemonics were presented in an attempt to correctly assess the native aortic valve and prevent postoperative residual aortic regurgitation. Some practical pieces of advice were given on the technical side of reconstruction and a thought about continuous follow-up with computed tomography for patients, being concomitantly operated with either root dilation or ascending aortic aneurysm. Next one was Mr. Grady, who gave his view on myocardial preservation. We went through some scenarios, when the heart does not arrest and which cardioplegia solution is better for various types of cardiac surgery. After the coffee break,

Dr. Wiedemann explained the current situation of implanting artificial aortic valves (surgical vs. transcatheter). Differences in mortality, incidence of stroke or paravalvular leakage is something we should and will be bearing in mind, when we speak the next time with our patients about aortic valve replacement. Dr. Vargo presented the last lecture of the day. Coronary artery bypass grafting is the most frequent cardiac surgery procedure yet there are always some controversies. When to operate? Which graft to use? In case of bilateral internal mammary artery harvesting, where to put the right one? He showed some very useful data on long-term patency that should make our decisions on the above-mentioned questions a bit easier. After lunch, the most interesting part of the seminar came up. Dr. Skubas presented a very interesting hands-on demonstration of the transoesophageal echocardiography planes. After that, we could suture some artificial valves on the presented material. It was great (especially since I got to do my first mitral valve annuloplasty)! The day was sealed off with a nice walk upon the castle hill and some relaxing views over the Alps surrounding Salzburg.

June 5, Wednesday. Dr. Vargo and his lecture on aortic dissections was followed by good breakfast. He showed the complexity of the procedures, the way they handle complicated type B dissections at Cleveland and explained why beta-blockers and vasodilators are so important. Dr. Skubas went on with some anaesthesiological points of view regarding the care for our common patient - what to do, if something happens to your anaesthesiologist? After the break, the wide variety of prosthetic valve choices was presented by Dr. Karamlou. Special focus was given to the On-X valve and its beneficial low anticoagulation rate. The topics were encircled as Dr. Ehrlich concluded the session with a detailed procedure explanation about the Bentall procedure. His exceptional experience on aortic surgery was clearly visible in very tough case reports he presented. The afternoon was reserved for the first half of our own case presentations. Dr. Skubas was the moderator and I must stress out my humbleness and express sincere congratulations to all of the speakers! Great job! In the evening a bunch of us went to the city center and enjoyed the upcoming summer breeze while cooling off with a tasty glass of beer (perhaps that shouldn't be included in the diary ...).

June 6, Thursday. The day started with a charismatic lecture on aortic arch replacement, held by Dr. Ehrlich. He took us from diagnostics to optimal management. With that I mean, as it was specifically emphasized, management of aortic arch lesions and brain preservation, achieved mainly through antegrade cerebral perfusion. Dr. Skubas was showing us how to appropriately evaluate prosthetic heart valves on echocardiography. This session was in my opinion one of the more exhausting ones due to many different valves and many positions. Nevertheless, it was very useful and I would like to thank Dr. Skubas for the presentation. He went on with a lecture on strategies after postcardiotomy ventricular dysfunction. We gained additional knowledge on intra-aortic balloon pump, extracorporeal circulation, the Impella device and medical therapy. Dr. Kocher presented the last faculty lecture of the day. He talked about training concepts in cardiac surgery; how important it is to choose a motivated and good-skilled mentor during our residencies! It shocked me to acknowledge that more than half of medical students experience intimidation or some sort of harassment - that is intolerable! After lunch, the second half of participants had to present their case reports (me included). Again, great presentations and a deep bow to all the presenters, who were all exceeding themselves. The evening went on by a classical concert that was a pleasure to experience. Thank you to all who performed!

June 7, Friday. Is it already the last day? Final lectures were held by Dr. Kocher on the David procedure and another overview of the constant duel between mechanical and bioprosthetic valves for the aortic position. Dr. Laufer talked about decision-making when it comes to functional mitral regurgitation. After lunch, the post-seminar test was waiting for us. It all finished with a farewell reception and graduation dinner. At the end of this year's seminar, I would like to thank each and every one of the faculty members, the staff and my colleague- fellows. It was worth the time and I will definitely recommend this seminar in all fields of medicine to my colleagues in Slovenia. My application for next year is already sent - hope to see you again!

Anze Djordjevic, MD (Slovenia)

SEMINAR DIARY FROM FELLOW

Selbi Meiramova, MD
National Research Cardiac Surgery Center
Astana, Kazakhstan
June 2 - 8, 2019



June 2, Sunday evening. I had arrived to Salzburg by plane the day before and was the only one there, so I spent that day exploring the city. There was the first meeting at 7 o'clock. It has been very exciting to meet the Faculty members and other participants, the atmosphere was nice and relaxed, so we spent the evening enjoying the meal and discussing the following week.

June 3, Monday. At 8 o'clock we were welcomed to the seminars and had the pre-seminar test. The lectures were very educational, I especially enjoyed Nikolaos Skubas's lecture on cardiovascular physiology and pharmacology, since it was helpful for me as the surgeon to understand what actually going on the other side of a "blood-brain barrier". After the coffee break Dr. Wiedemann was kind enough to share some thoughts on medicine in developing countries and the world in general, although he had a shift previous night and drove all the way from Vienna. At the evening we went for drinks with the faculty members and again everybody had plenty of questions. After that I went to the center to explore the city a little bit.

June 4, Tuesday. Morning started with a talk about aortic valve repair, Dr. Patrick Vargo shared some tips and tricks in making this procedure successful. Later, another great topic on myocardial preservation and cardiac anesthesia was presented by Patrick M. Grady and Dr. Skubas respectively. Those types of lectures emphasized the main theme of this week – team work. We were reminded that cardiac surgery is not only about cutting and sewing, but about smooth work of every member of the team at every stage, so it is crucial for a surgeon to know what other team members do and vice versa. After lunch the wet lab was established and it was exiting to work with our hands again, so 3 hours passed by.

June 5, Wednesday. In the morning we had a talk by Dr. Wiedeman about TAVR vs SAVR, which was right on time, counting that those procedures are considered as competing. Also, he had some great points about critical thinking when reading an article or research paper, because not always everything that is presented there truly fits the situation. The great topic was presented by another doctor from Vienna – Marek P. Ehrlich, he told us in details how to perform the Bentall procedure and it was interesting to compare it with our performance. He had some good points about cerebral perfusion as well, so I took notes to share it with my colleagues at home. In the afternoon most of the fellows felt a little tense because case presentations were starting. The cases were not less interesting than the

lectures! Of course everybody was nervous, but the reports themselves were interesting and educational. Another good part was that they tried to make their talk interactive and they did well.

June 6, Thursday. That day was probably the highlight of the seminar. We had a new face – Dr. Alfred Kocher – and his presentation was about things not less important than surgeries and patients' evaluation. It was about residency and mentorship and I could not relate to it more. After lunch we had another part of the fellows presenting their cases and I was one of them. I was a bit nervous but it mostly went well and the evaluation from Dr. Kocher was great. In the evening there was the chamber music concert. It was marvelous! The musicians were performing parts from The Nutcracker, which is my favorite ballet, their play was so smooth and beautiful that I could not help but make a parallel with the OR.

June 7, Friday. The last lectures again emphasized the importance of critical thinking when reading scientific articles and applying it to your practice. This seminar is one of the most educational events that I've been at. It left me with millions of questions, which is going to be the driving force of my growth when I come back home.

Selbi Meiramova, MD (Kazakhstan)