



OPEN MEDICAL INSTITUTE

MATERNAL AND INFANT HEALTH
SEMINAR REPORT 2019

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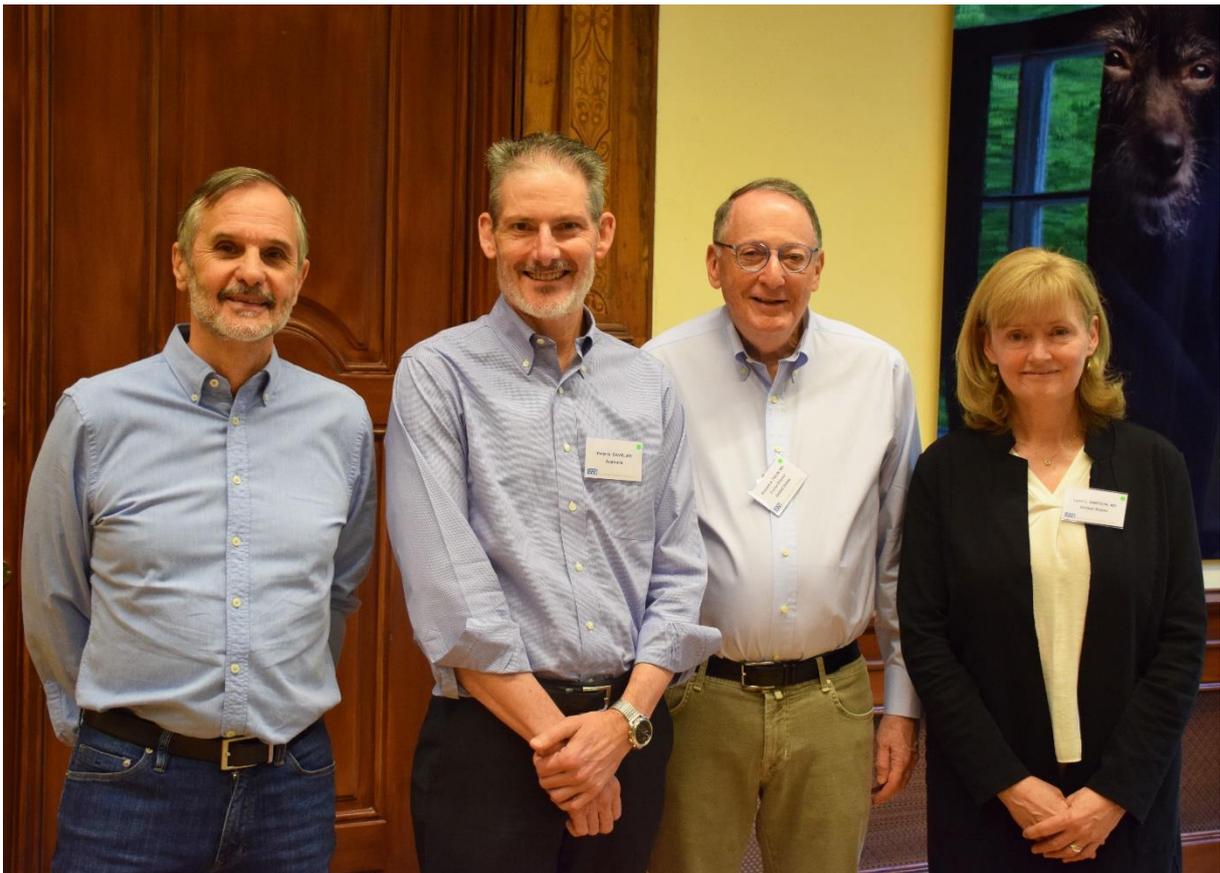
SALZBURG COLUMBIA SEMINAR MATERNAL AND INFANT HEALTH

May 19 - 25, 2019

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| • 31 fellows from 23 different countries and regions |
| • 6 faculty members from the United States, Australia and Austria |
| • 21 lectures and 1 case presentation session given by faculty |
| • 28 interesting case presentations by fellows |
| • 8 excellent case presentations selected by faculty |

Faculty Photo (L-R)

Friedrich Reiterer, MD (Co-Course Director); Peter G. Davis, MD;
Richard A. Polin, MD (Course Director) and Lynn L. Simpson, MD
not pictured: Thomas A. Hooven, MD and Christian Dadak, MD



Group Photo of Faculty and Fellows



2019 Salzburg Columbia University Seminar in Maternal and Infant Health
Sunday 19 May - Saturday 25 May 2019



		Sunday 19.05.2019	Monday 20.05.2019	Tuesday 21.05.2019	Wednesday 22.05.2019	Thursday 23.05.2019	Friday 24.05.2019	Saturday 25.05.2019
07:00	08:00		BREAKFAST	BREAKFAST	BREAKFAST	BREAKFAST	BREAKFAST	DEPARTURES
08:00	09:00		Introductions Pre-Seminar Test	Steroids: State of the Art Peter G. Davis, MD	Pathophysiology of Neonatal Sepsis Thomas A. Hooven, MD	Management of Septic Shock Thomas A. Hooven, MD	CPAP: The Gold Standard Non-Invasive Support Richard A. Polin, MD	
09:00	10:00		An Evidenced Based Approach to Early-Onset Sepsis Richard A. Polin, MD	Microbiome and Child Health Thomas A. Hooven, MD	Use of Ultrasound on L & D Lynn Simpson, MD	First Trimester Ultrasound Lynn Simpson, MD	High Flow Nasal Cannula and NIPPV: The Challengers Peter G. Davis, MD	
10:00	10:30		COFFEE BREAK	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK	
10:30	11:30		Screening for Congenital Heart Disease in the Fetus Lynn Simpson, MD	Healthcare-Associated Infections Richard A. Polin, MD	Oxygen Targeting in the NICU Peter G. Davis, MD	Maternal Microbiome & Preterm Birth Richard A. Polin, MD	Never Take Your Eyes off of Monochorionic Twins Lynn Simpson, MD	
11:30	12:30		Respiratory Support in the Delivery Room Peter G. Davis, MD	The Late Preterm Infant Friedrich Reiterer, MD	Immunotherapy of Neonatal Sepsis Thomas A. Hooven, MD	Oxygen Saturation Targets during Resuscitation at Birth Friedrich Reiterer, MD	Pathogenesis & Prevention of NEC Richard A. Polin, MD	
12:30	14:00		LUNCH	LUNCH	LUNCH	LUNCH	LUNCH	
14:00	15:00		Case Presentations and "Rocket Rounds" for Neonatologists and Obstetricians Friedrich Reiterer, MD Lynn Simpson, MD	Workshop Fellows' Case Presentations	Free Afternoon	The European Perspective on Perinatal Care Christian Dadak, MD	Post-Seminar Test Evaluation & Discussion	
15:00	16:00	Workshop Fellows' Case Presentations						
16:00	17:00							
17:00	18:00							
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					<i>20:30 - 21:30</i> CHAMBER MUSIC CONCERT		

**COLUMBIA UNIVERSITY
SEMINAR
in
SALZBURG**

"Maternal and Infant Health"

May 19 – 25, 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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Richard A. Polin, MD (Course Director) is the William T. Speck Professor of Pediatrics at Columbia University, College of Physicians and Surgeons in the City of New York and has been Director of the Division of Neonatology at Morgan Stanley Children's Hospital of New York-Presbyterian since 1998. After earning BA and MD degrees from Temple University, Dr. Polin completed a pediatric internship and residency at Children's Memorial Hospital in Chicago, and a pediatric residency and neonatology fellowship at Babies' Hospital in NY. He was Pediatric Chief Resident there, from 1974-75 and Rustin McIntosh Fellow in Pediatrics from 1975-77. An Associate Pediatrician at Children's Hospital from 1975-1977, he was named Outstanding Pediatric Attending for 1976-1977. He won similar honors for 1978-79 and 1982-83 at The Children's Hospital of Philadelphia, where he held the positions of Director of the Housestaff Training Program, Assistant and Associate Physician-in-Chief, Academic Coordinator of Pediatrics, and Acting Director, Neonatology. Temple University's Medical School named Dr. Polin its outstanding alumnus in 1995. In 1998, Dr. Polin returned to Morgan Stanley Children's Hospital of NY- Presbyterian as the Director of Neonatology and Vice-Chairman of the Department of Pediatrics. In 2005 he received the Physician of the Year Award both from the New York-Presbyterian Hospital Columbia University Medical Center and the Morgan Stanley Children's Hospital of New York-Presbyterian, Division of Nursing. In the spring of 2006 Dr. Polin received the National Neonatal Education Award from the AAP's Section on Perinatal Pediatrics. Dr. Polin has published over 200 original papers, 20 books (including *Fetal and Neonatal Physiology*, *Workbook in Practical Neonatology*, *Pediatric Secrets*, *Fetal and Neonatal Secrets*, *Current Pediatric Therapy*, *Pocket Neonatology*) and more than 200 abstracts. Dr. Polin is the Chair of the NICHD Neonatal Research Network executive steering committee, and he is the past chair of the Sub-board of Neonatal-Perinatal Medicine.

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Friedrich Reiterer, MD (Co-Course Director) is a Professor of Pediatrics at the Children's Hospital of the Medical University of Graz, working as a neonatologist at the Clinical Division of Neonatology. After earning an MD degree from the University of Graz in 1979, he completed a general and pediatric internship in 1987. In 1989, he completed a postgraduate education at the university hospital for children, Queen Fabiola, in Brussels, Belgium, for research activity in the field of sudden infant death syndrome. From December 1990 to May 1992, Dr. Reiterer completed a research fellowship at the Children's Hospital of Philadelphia, USA, working on pulmonary function testing in neonates and multichannel polysomnographic recording for evaluation of infant apnea. He continued his research activity in Graz focusing on the management of neonates with respiratory morbidity. Dr. Reiterer has published in numerous medical journals and has been invited to speak at national, and international conferences. Beside his research activity he is regularly and actively involved in medical training programs for students, nurses and physicians and since 2005 he is faculty member and co-course director at the Maternal Infant Health seminars of the AAF in Salzburg. Dr. Reiterer is a member of the German-Austrian society for neonatal and pediatric intensive care. He is married and has two children.

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Christian Dadak, MD is a native of Austria and studied medicine at the Medical University Vienna. In 1975 he obtained his medical degree. From 1974-1975, Christian Dadak was an Assistant at the Institute for Blood groups and Transfusion medicine and held internships in Internal medicine, and Surgery and Transfusion medicine. Christian Dadak did his residency from 1977-1982 at the 2nd Department of OBGYN, where in 1978, he became the Director of Senology. Currently, Dr. Dadak is emerit Associate Professor at the Medical University, Vienna. He is an OB/GYN specialist. He is the President of the Austrian Society of Prae- and Perinatal Medicine, President of the Austrian Society of Sexual Medicine and a board member of the European Association of Perinatal Medicine as well as a board member of numerous Austrian Medical Societies. Since 2009 he is Visiting Professor at the Weill Cornell Medical College New York, since 2011 he is an Honored Member of the Russian Association of Perinatal Medicine, since 2013 Honored Professor of Siberian Medical University Tomsk as well as Visiting Professor of Kazan State Medical University, Russia and of the Mongolian University in Ulaanbaatar.

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Peter G. Davis, MD is the Professor/ Director of Neonatal Medicine at The Royal Women's Hospital, Melbourne. He has led the Department of Newborn Research since 2009. He completed his MBBS at the University of Queensland in 1982 and underwent basic paediatric training in Brisbane. He completed his neonatal fellowship training at McMaster University, Canada where he developed an interest in Clinical Epidemiology and Evidence Based Medicine. After returning to Australia in 1993, he was appointed as a consultant neonatologist at The Royal Woman's Hospital, Melbourne. His interest in non-invasive ventilation led to an MD through the University of Melbourne in 1998. He leads a team of enthusiastic clinical researchers interested in improving the care of babies in the delivery room and in the intensive care unit. He is a substantial contributor to the Cochrane Collaboration and a member of the neonatal subcommittee of the International Liaison Committee on Resuscitation (ILCOR). Support for his research comes from the Australian National Health and Medical Research Council through a Practitioner Fellowship, a Program Grant and a Centre for Research Excellence Grant. He and his wife Noni live in Melbourne where they are enthusiastic but slow ocean swimmers and cross-country skiers.

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Thomas A. Hooven, MD is Assistant Professor of Pediatrics at Columbia University's Vagelos College of Physicians and Surgeons in New York City. He received his undergraduate degree from Yale University. After graduating from University of Michigan Medical School, he completed his general pediatrics training at Morgan Stanley Children's Hospital of New York-Presbyterian in Manhattan, where he also served as chief resident. Following his neonatology fellowship at the same institution, he participated in the Pediatric Scientist Development Program, where he established his research interests in bacterial genetics and host-pathogen interactions that contribute to neonatal illness. He has a grant from the National Institutes of Health to perform whole-genome screening studies on group B *Streptococcus*, with the goal of discovering a protein-based vaccine target. He is also engaged in bioinformatics and machine learning studies to better understand and predict necrotizing enterocolitis among premature patients. He lives in Manhattan with his wife, Christina, and two children, Samuel and Maya. In his spare time (which is rare!) he enjoys creative writing, tennis, and jogging.

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Lynn L. Simpson, MD, Professor of Obstetrics and Gynecology, is a maternal-fetal medicine specialist with expertise in obstetric ultrasound, fetal echocardiography, prenatal diagnosis, invasive fetal procedures, and the management of complicated multiple pregnancies. Her current research interests include congenital heart disease, multiple gestations, and twin-twin transfusion syndrome. Dr. Simpson has published in numerous medical journals and has been invited to speak at local, national, and international conferences. She has received teaching awards from medical students and residents for her commitment to medical education. Dr. Simpson is the Director of the Division of Maternal-Fetal Medicine at Columbia University Medical Center/New-York Presbyterian Hospital, Columbia Campus in New York.

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FELLOWS

Fellow Booklet 686SCOS19 Maternal and Infant Health



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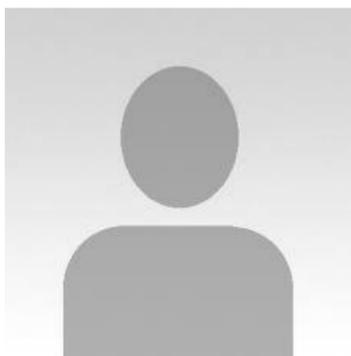
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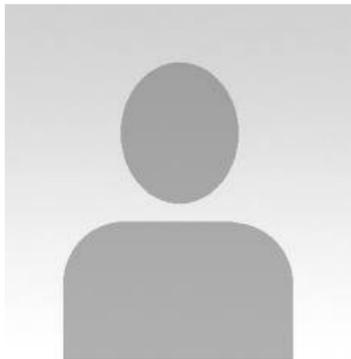
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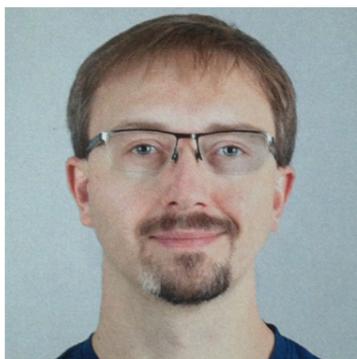
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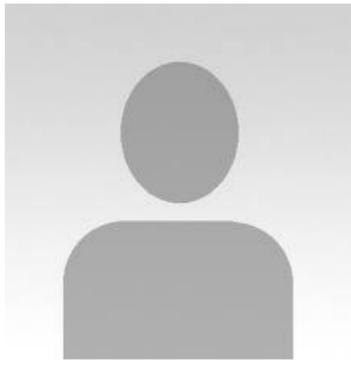
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SEMINAR DIARY FROM FELLOW

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May 19 - 25, 2019



This was my second time attending the Maternal and Infant Health seminar, but my first time in Schloss Arenberg. Ten years ago we received the news a few days before the seminar that a fire had damaged the Schloss and we would be accommodated elsewhere. I had heard great things about the Schloss and was disappointed I didn't get this experience in Salzburg. At the seminar in 2009 Prof. Reiterer, in his case presentation, introduced us to a rare syndrome "Congenital Central Hypoventilation Syndrome." I was then a resident, just starting my neonatal studies, and this was the first time I had heard of it. This year, when faced with a clinical dilemma of a term infant not breathing in his sleep I remembered Dr. Reiterer's case presentation but also remembered the Salzburg seminar and how great it would be to attend again but this time in Schloss Arenberg. My wish came true.

May 19, Sunday evening. I arrived in Salzburg by train in the late afternoon, directly from Zagreb, Croatia. As I was walking around the train station alone and confused, I saw someone carrying printed materials that looked familiar, directions to Schloss Arenberg! My first friend I thought, I caught up to her and introduced myself. Lucky me, Madlena from Georgia was here two years ago, and knew where to go, just follow her. We took the bus, walked up and rang the doorbell at the gate of Schloss Arenberg. As the gate was opening I had a feeling, this was going to be a great week. After a routine check in at the front desk, we received keys to our rooms and a folder with all the information we needed. Not much time, I quickly checked out the room, very clean and comfortable, perfect for a week stay. Walking down to the welcome reception at 19 o'clock I was a little nervous. I did not know anyone except my new friend Madlena from the train station. Looking at all the new faces I realized everyone looked a little nervous but our faculty quickly broke the ice as they walked around, introduced themselves and made small talk. We then went outside, our only chance since they were calling for rain all week, where Dr. Wolfgang K. Aulitzky (Medical Director of AAF), Dr. Polin and Dr. Reiterer gave us an overview of the seminar. Later we went to enjoy dinner with fellows and faculty, and already on our first night, stayed talking and exchanging experiences until late into the night.

May 20, Monday. At 8 o'clock we all found a seat in the beautiful Grand Lecture Hall where printed material was found at each seat, perfect to take notes on. Dr. Polin once again introduced himself and asked the fellows to say something interesting about themselves, which made the atmosphere even

more familiar. We then went on to take a pretest. I was not very familiar with the questions pertaining to obstetrics but this made me listen to these lectures more closely thinking about the questions I did not know the answer to. The first lecture by Dr. Polin, every neonatologists favorite topic and a topic that never gets old, early-onset sepsis in the newborn. For me very exciting since I have read many papers and books Dr. Polin wrote on the subject and now I was getting to hear him talk in person. Prof. Simpson had a great talk on screening for congenital heart disease in the fetus. Her lecture was very well structured, easy to understand, full of useful clinical information, ECHO pictures and video clips. She spoke slowly and clearly, a lecture that kept my attention even though it is not something I practice. Prof. Davis also had a great neonatology lecture. Neonatologists continue to “fine-tune” respiratory support in the delivery room. He gave us up-to-date information, was very informative with a great discussion in the end. The day ended with faculty case presentations, we heard Dr. Reiterer with three rare neonatal cases and Dr. Polin with two everyday neonatal dilemmas and how to go about them, while the Ob/Gyn had their obstetric “Rocket rounds” as they called them, in another room. The academic part of the day ended at 16 o’clock. We put on our boots, took out our umbrellas and in little groups set out to see the city in the pouring rain. After dinner the brave went out to a pub, allegedly a must Go and have a beer there when attending a Salzburg seminar, this information is passed on from previous seminar generations.

May 21, Tuesday. Another exciting day started with breakfast and coffee at 7 am in the morning. I found out the fellows that went to the pub the previous night had a good time but came back early as some had their presentations today and wanted to be well rested. Today, lots of neonatology lectures, of course my favorite. First lecture from Dr. Davis was about prenatal and postnatal steroids, a good topic for both Ob/Gyn and neonatologists. There is some new information on giving low dose Hydrocortisone in prevention of BPD in very low birth infants. The next lecturer we met for the first time today, dr. Hooven, who came to Salzburg with his 7-year-old son from New York. Dr. Hooven gave an interesting lecture on the microbiome and child health. We learned about the sequencing revolution, the nonsterile amnioplacental unit, establishing the neonatal microbiome during and after birth and even how changing the microbiome early with antibiotics could have an affect later on obesity. I am curious to see where this will go and what this new research will bring us in the clinical practice. After the coffee break another always fascinating lecture from Dr. Polin and then a lecture from Dr. Reiterer about the late preterm infant. This lecture was great because he gave cases as examples of late preterm morbidity seen in everyday practice. I hope this made the Ob/Gyn colleagues think about how to prevent preterm birth and if unsuccessful at least give prenatal steroids up until term since there is evidence of respiratory benefit even for the late preterm infants. At lunch I got the opportunity to sit at the table with Dr. Davis, his wife also a pediatrician, and some fellows. We talked about Australia, Davis’ home county and discussed individual practices in each of our countries. Following lunch, the fellows had a chance to take over the microphone to see what it’s like to get up in front of the audience. They presented cases from their practice. I am sure they were nervous but everyone did great. We all heard some new and interesting things, and of course learned a lot from each other. Today we formed a viber group with all the fellows to share pictures from Salzburg. I am hoping this will allow us to stay in touch and hopefully collaborate in some ways in the future.

May 22, Wednesday. Today we reached the half point. I am really enjoying this seminar and talking to other fellows everyone is having a great experience. First lecture today from Dr. Hooven brought us back to the molecular level and pathophysiology of neonatal sepsis. He discussed mechanisms of perinatal infection, host responses to bacterial invasion and how dysregulated immune responses can lead to clinical deterioration. Overall a great lecture about some things clinicians don’t always think about in the clinical setting. Dr. Hooven also had the last lecture today which followed on his first topic, neonatal sepsis. He discussed possible ways to boost the immature immune system of the newborn to help fight infection more efficiently. He discussed giving exogenous IgG (IVIG), stimulating phagocytes (giving granulocyte colony stimulating factors, G-CSF) and giving probiotics. Unfortunately, there is no strong evidence to support any of these in the clinical practice for now, but the search continues. Dr. Simpson with her calm voice, gave a clear, practical and to the point lecture on the use of ultrasound

in the L & D. The lecture from Dr. Davies today, oxygen targeting in the NICU, tried to end a 50-year uncertainty of targeting lower compared to higher SpO₂ in the NICU. Following lectures and after lunch, we had a free afternoon ahead of us, and the rain continued to pour! The fellows split up into smaller groups for the afternoon depending on interests, some went shopping, others went to explore Salzburg and its rich history, some went walking, while others took advantage of the weather and went to sleep.

May 23, Thursday. Today we said goodbye to Dr. Hooven following our first lecture from him on management of septic shock. We learned what we could do “once the horse is out of the barn” as he was calling acting on septic shock and immune cascade as an absolute emergency in the neonate. It is always important to remember basic resuscitation and broad spectrum antibiotics before anything else, but unfortunately, regardless of approach, septic shock has very poor prognosis. For the Next lecture, once again, neonatology and Ob/Gyn, were very informed by Dr. Simpson. The lecture was about prenatal diagnosis using ultrasound in the first trimester as a clinically valuable tool. There was a discussion following the lecture on noninvasive prenatal testing since we are now in a transitional era where this technique is offering early accurate diagnosis. Dr. Simpson advised 1st trimester ultrasound as still having an important role, especially in the assessment of parity and gestational age. Another very interesting lecture was from Dr. Polin today, where we learned how vaginal microbiome can be a potential marker for preterm birth. Does a placental microbiome exist or is it sterile; is still being debated. We heard about oxygen in the delivery room from Dr. Reiterer. For me, using NIRS in the delivery room was something new and very interesting, but still in the experimental phase. Today we met Dr. Dadak from Austria, the president of the Austrian Society of Perinatal Medicine. Dr. Dadak gave an interesting lecture with some statistical data, among others preterm birth and percent of cesarean section in Europe. It was interesting to see where some of our countries stand in these statistics. Following these lectures, the fellows took the stage once again with interesting case reports from their own practices. Today, it was my turn to introduce to the fellows and faculty my patient with a rare disease (1/1,000,000 live births), I believe it went well and hopefully it will someday help someone to think of this as a differential diagnosis and maybe make the same diagnosis. I was very impressed with how well everyone presented their cases and how much we learned from each other. A perfect end to a perfect day was a chamber music concert. We all dressed up, came to the transformed lecture hall to listen to a wonderful concert by very gifted musicians. It was very emotional with the concert ending with “you lift me up” some fellows even shed a tear. Following the concert, feeling very happy and emotional, we all came down along with the musicians and faculty, had cocktails, took pictures and talked in the lobby.

May 24, Friday. Sad but true. Here we are in our last day. We started the last day with the topics of noninvasive ventilation (CPAP and HFNC) listening to what our experts have to say on this very important subject in neonatal medicine.

Looking back to this week in Salzburg, I am thankful to the American Austrian foundation for having us, for the perfect flawless organization, the comfortable and exciting experience at Schloss Arenberg. I am thankful for OMI seminar for connecting us to new colleagues, now good friends, which resulted in a network of wonderful colleagues in the field of neonatology and Ob/Gyn. I give thanks to our wonderful teachers, our faculty this week, for sharing their time, knowledge and experience and for being so open and willing to answer questions. We learned a lot, but most importantly we felt very good about ourselves and comfortable attending this seminar. Thank you OMI for existing. I hope to participate in future seminars here in Salzburg.

Katarina Bojanic, MD (Croatia)

SEMINAR DIARY FROM FELLOW

Florentina Mashuda, MD
Bugando Medical Center
Mwanza, Tanzania
May 19 - 25, 2019



May 19, Sunday evening. I arrived to Salzburg City with a mini bus from Munich airport, after travelling from my home place Mwanza City in Tanzania by airplane to Dar-es-Salaam City in Tanzania. From Dar-es-Salaam I had to board another airplane to Zurich airport in Switzerland and then another plane to Munich airport. This was a long but interesting trip; I was happy to see the alpine mountains, that ranged all the way from Zurich to Munich up to Salzburg. After reaching Salzburg I was brought to the Schloss Arenberg area. I received a good welcome and had to fill out some formal papers, then I was given a nice room to stay. At 7 o'clock pm there was a reception party, whereby I met fellows from different countries, I was happy to see that all of them were enthusiastic and friendly. Then the AAF Medical Director and the Course Director Richard A. Polin (MD), gave us an introduction for the Course. Then we had a marvellous dinner and this was a great opportunity for us (fellows) to get to know each other.

May 20, Monday. At 8 o'clock we were welcomed to the seminar again. We started with the pre seminar test. The questions were very tricky. The first lecture was on Evidence based approach on early onset sepsis presented by Richard A. Polin, MD. The lecture had a lot of new approaches to management of early onset sepsis including watchful observation to neonates with risk factors for early sepsis, if they don't present with any signs and symptoms of sepsis. The second lecture was on screening of congenital heart diseases in the fetus, that were presented by Lynn L. Simpson, MD. This was a very interesting topic she taught us various fetal echocardiographic views for detecting congenital heart diseases e.g. the four chamber view, the LVO view, RVO and others. She showed us some echocardiographic images and videos of various congenital heart diseases. She also discussed about 2 types of congenital heart diseases, that would need planned delivery and immediate surgical interventions (TGA and Hypoplastic left heart syndrome). The third lecture was on respiratory support in delivery rooms, which were presented by Peter G. Davis, MD. He taught us about some faults which can occur with mask ventilation e.g. air leaks and obstruction of the airway. He taught us about various studies comparing CPAP and surfactant provision with Endotracheal mechanical ventilation with surfactant provision. After lunch, we had case presentations from faculty members. Friedrich Reiterer, MD presented three cases, which included a new born who had respiratory distress and cyanosis at birth, the nasal catheter was not able to pass through the nostrils and provoked nasal bleeding. After various imaging investigations, it was found out to have congenital pharyngeal glioma. Another case was a newborn baby, that had bilateral pleural effusion, hydrocephalus and oedema of the head, neck and upper part of the chest, then after imaging techniques it was found out to have the SVC syndrome due to congenital SVC stenosis. Richard A. Polin presented two cases, one of which was about the electrolyte profiles of the newborn and the mechanisms for electrolytes changes mainly on Na and K.

The second case was on neonatal sepsis (meningitis), indication for CSF analysis and interpretation of neonatal CSF analysis findings. There after we had presentation from the AAF (on the course itself), when it was started, the aims of the course and the sponsors of the course. This was the end of the 1st day program and together with other fellows we went for a tour and shopping in Salzburg city. The city is beautiful and interesting, the only challenge is, that it was raining throughout the day and some of us did not have umbrellas. So the umbrellas were the first items for shopping.

May 21, Tuesday. At 8 o'clock Peter G. David started his lecture on Steroids: State of the Art. He discussed about the antenatal steroids, its mechanism of action, its indication, the appropriate gestation age for its administration, its advantages and its risks and the important of assessing the risk to benefit ratio before the administration. He went on and discussed about the post natal steroids, its mechanism of action, its indications and the best time and duration of administration so as to optimize its benefits and the importance of weighing the risk to benefit ratio before its administration. All these information was discussed with evidence from various controlled clinical trials and meta-analysis. It was a very interesting and well-presented topic. Then, Thomas A. Hooven, MD presented a topic on Microbiome and Child Health, he talked about the microbiome of various parts of the body e.g. the skin and the oral cavity and its implications in immune modulation and endocrine function and how the alteration of micro biome (dysbiosis) can be implicated in various pathological states like NEC and childhood obesity. Thereafter Richard A. Polin, MD presented a topic on Healthcare -Associated Infections. He talked about the implication of hand hygiene on Healthcare associated infections. He discussed about central line associated bacterial infection (CLABI) and Ventilator associated pneumonia. He also presented on late onset neonatal sepsis (LONS). The last lecture was presented by Friedrich Reiterer, MD; the topic was about the late preterm infant. He described the common risk factors for late preterm infants as compared to full term infants and discussed some case studies of various medical conditions common in late preterm infants e.g. Neonatal jaundice and kernicterus. After lunch, we had 14 case presentation from fellows, the cases were very interesting and they were neonatology cases as well as obstetrics/gynecology cases. To mention a few cases included SVT in fetus, Neonatal Lupus, Neonatal Measles, Neonatal Tetanus, Water House Frederickson Syndrome, Apple peel syndrome, Gonadal dysgenesis, Clavicular fracture in neonatal period with concealed bleeding, HELLP Syndrome with HUS and many other interesting topics. It was a very good learning day. After this session, I went to Salzburg city with my new friends to visit the cathedral, the cemeteries and bishops' palais, we were able to see some places, that were used in the Sound of Music movie. Thereafter we visited some shops and we bought various gifts for our families and friends at home.

May 22, Wednesday. Thomas A. Hooven, MD presented a topic of Pathophysiology of Neonatal sepsis. He talked about the challenges of defining neonatal sepsis clinically, Prematurity and sepsis go hand in hand, sepsis being a risk for premature delivery and prematurity being a risk for sepsis. He discussed about the implication of vaginal dysbiosis to early onset neonatal sepsis. He went further to discuss the reasons for premature babies being more susceptible to sepsis. He also talked about the role of Toll like receptors in response to neonatal sepsis working as fire alarms for the immune system. He made an interesting discussion on Systemic Inflammatory Response Syndrome (SIRS) and FIRS which is the fetal analogy. He ended up by discussing the mechanism leading from infection to septic shock. Then Lynn L. Simpson (MD) had a very interesting topic on the use of USS on Labour and delivery. She described various indications for USS during labour and delivery including to check for fetal viability, presentation, evaluation of obstetric hemorrhage, to estimate fetal weight, determining amniotic fluid volume, evaluation of post-partum hemorrhage etc. After the coffee break Oxygen Targeting in The NICU was presented by Peter. G. Davis, MD. He went through the literature as to where the use of oxygen for babies with RDS was started, the discussion went on up to the current oxygen saturation target, whereby the oxygen saturation of 91-94% was found to be optimal for premature babies and higher levels 92-98% for full term babies with PPHN, Meconium Aspirations and birth asphyxia. Our wednesday seminar session ended up by discussing on Immunotherapy of neonatal sepsis. This topic was discussed by Thomas A. Hooven, MD. He talked about various clinical trials done to find out the possible Immunotherapy for neonatal sepsis. The trials were done on the possibility of using IVIG, GM-

CSF, G-CSF, Monoclonal antibodies or combining these therapies with antibiotic use. All modalities did not seem to be effective in the management of neonatal sepsis. Breast milk was found to be the best Immunotherapy. Then we had a free afternoon. I spent the afternoon with my new friends in the Hellbrunn Castle. It was very interesting visiting the castle and going through the history of the archbishop

May 23, Thursday. The first lecture started at 8:00 am, was presented by Thomas A. Hooven, MD. The lecture was on Management of Septic Shock. He started by a short description of the pathophysiology of septic shock, then he described various modalities of management of septic shock including the use of antibiotics, fluid resuscitation, pressors and inotropes, Milrinone, VA ECMO as well as the use of corticosteroids in neonatal septic shock and continued by discussing the outcome after neonatal septic shock is dismal and ended up with poor neurodevelopmental outcome. Then Lynn L. Simpson, MD, presented a topic on First Trimester Ultrasound. She discussed various indications for first trimester ultrasound. Then she went on discussing the details of each indication e.g. detection of congenital anomalies or structural defects and various aneuploidy syndromes, antepartum hemorrhage, postpartum hemorrhage, polyhydramnios etc. After the coffee break Richard A. Polin, MD discussed a topic on Maternal microbiome and preterm birth. He explained how the change in vaginal flora (bacterial vaginosis) is strongly associated with preterm birth, and that an increase in vaginal lactobacillus iners is strongly associated with premature delivery. He talked about maternal GI microbiome as the predictors of preterm delivery and discussed periodontics in pregnancy and the fact that similar patterns of microbiome can be found in the placenta of the mother with periodontitis. The fourth topic was presented by Friedrich Reiterer, MD, which was about Oxygen saturation targets during resuscitation at birth. He discussed the meta analysis done in various randomized clinical trials as well as the importance of measuring cerebral oxygen saturation as this does not collate with oxygen saturation displayed by the pulse oxymeter. The conclusion was that for resuscitation of term newborns we should start with FiO₂ of 0.21, and for preterm babies FiO₂ 0.21-0.3 and for premature babies <28 wks FiO₂ 0.3 but in case of severe bradycardia HR<60bpm or cardiac arrest then 100% oxygen can be used for resuscitation but should be weaned off quickly when the patient is stabilized so as to avoid reactive oxygen species. Thereafter we went for lunch. We had a delicious lunch with pork, turkey and Austrian bread and salads. After lunch Christian Dadak, MD took us through The European perspective of perinatal Care. He said that the European maternal mortality rate and neonatal mortality rate are declining when the statistics of the years 2010 are compared to the year 2015. However, there is an increase of numbers of clients with advanced maternal age. The prevalence of premature delivery is also declining and this can be associated with improved pregnancy monitoring and the use of tocolytics. He also discussed the risk factors associated with advanced maternal and paternal ages. After these lecturers we had interesting case presentations from fellows. Various cases were discussed including congenital ichthyosis, central hypoventilation syndrome, placental chorioangioma, malrotation and volvulus of the intestines, Pump twins, Splenic aneurism in pregnancy, TOF in pregnancy, hemodynamically significant PDA complicating to cardiac dysfunction after surgical closure of the PDA, Legionella pneumonia in neonate (mystery disease). Spontaneous intestinal perforation in neonate, Fanconi syndrome and a premature neonate with severe bilateral cleft lip and palate.

At 8:00 pm we had dinner and thereafter we had a marvelous chamber music concert in Schloss Arenberg area. It was very relaxing. Then we had drinks (wines, juices).

The seminar week at Schloss Arenberg area was very interesting and memorable. I am glad, that I have learnt a lot of things and I am anxiously waiting to apply the knowledge in my daily work. It is very interesting to make new friends and to explore the city of Salzburg.

My sincere gratitude goes to the organizing team for this seminar. This seminar has expanded my professional network as well as social network. I will recommend this seminar to my colleagues and I hope, that I will be able to get another opportunity in the future to attend the seminar and also for clinical observership in an Austrian hospital.

Florentina Mashuda, MD (Tanzania)