The Salzburg Cornell Infectious Diseases Seminars - the first fourteen years (1996-2010)

*Richard B. Roberts**

In 1993, The American Austrian Foundation (AAF) organized the Salzburg Seminars International. The goal of this international program was to "educate young physicians and health care providers from countries in transition and foster professional growth" (AAF). The twenty nine countries in transition included those from Central and Eastern Europe, the Russian Federation and Central Asia. Highly qualified early to mid-career level physicians with proficiency in English were selected to participate in Salzburg for an update in their medical specialty. Each week-long seminar was usually limited to less than fifty participants that allowed for in-depth interactions with the five faculty (usually four from the US and one from Austria). The seminars are now held throughout the year at the Schloss Arenberg, the renovated permanent home of the AAF in Salzburg since 2005. The AAF also offers a one-month clinical internship in an Austrian hospital for previous seminar fellows.

This Austrian initiative was administered by the AAF and the Open Medical Institute (OMI) in collaboration with the following US academic medicine partners and the year of joining the program with their seminar topics: Weill Cornell Medical College-1993 and affiliated hospitals; New York Presbyterian Hospital, Memorial Hospital and the Hospital for Special Surgery (Anesthesiology and Intensive Care, Bone and Joint Surgery, Cardiology, ENT, Imaging, Infectious Diseases, Neurology, Neurosurgery, Obstetrics and Gynecology, Ophthalmology, Psychiatry, Rehabilitation Medicine, General Surgery, Thoracic Surgery, Urology); Children's Hospital of Philadelphia (CHOP), University of Pennsylvania School of Medicine-1995 (Pediatric specialties); Duke University School of Medicine-1995 (Family Medicine); College of Physicians and Surgeons of Columbia University-1998 (Maternal and Infant Health, Internal Medicine) and the Cleveland Clinic-2006 (Cardiothoracic Surgery, Cardiac Imaging and Pathology). These seminars are listed on the following AAF website: www.aaf-online.org. As of 2010 more than 10,669 physicians attended 303 seminars conducted by some 1,147 faculty members, making this international program one of the largest worldwide (AAF).

In 1995, I was invited to participate in the Neurology Seminar and to review central nervous system infections. After discussions with the medical director of the AAF in Salzburg, emphasizing the importance of HIV infection and AIDS, tuberculosis and hepatitis in many of these countries, the Infectious Diseases Seminars were initiated in 1996. Over the subsequent fourteen years during which time I was Director, 544 participants from the 29 countries attended these seminars (ranging from 32 to 48 physicians from 18-25 countries per seminar) and are listed by country in Table 1. In general, only one-third of those who applied (more than 1,600) were selected to attend the seminars. In addition, four more physicians, each from Qatar and Tanzania where Weill Cornell Medicine has ongoing international programs, the United Kingdom and Austria were also invited by OMI. Most seminar attendees (greater than 90%) specialized in infectious diseases, medical microbiology or public health. Overall, a total of 37 senior faculty members participated during the fourteen seminars. Four didactic lectures with 15 minute discussion periods were given in the morning followed by a computer workshop organized by Dr. Lee Riley emphasizing computer-based data analyses (EPIINFO) on Monday afternoons, interesting clinical cases from Cornell presented

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*MD, Professor Emeritus, Weill Cornell Medical College; Adjunct Professor, The Rockefeller University, NY, USA
barg@mail.rockefeller.edu

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as unknowns and discussed in small group settings on Tuesday afternoons (Table 2) and interesting cases presented by fellow participants on Thursday and Friday afternoons.

Table 1. 544 Fellow participants by country (1996-2010)

Country	Number of participants	Country	Number of participants
Albania	14	Lithuania	20
Armenia	17	Macedonia	13
Azerbaijan	19	Moldova	15
Belarus	8	Mongolia	18
Bosnia and Herzegovina	15	Montenegro	6
Bulgaria	10	Poland	39
Croatia	20	Romania	25
Czech Republic	15	Russia	70
Estonia	18	Serbia	15
Georgia	17	Slovakia	20
Hungary	17	Slovenia	18
Kazakhstan	19	Tajikistan	13
Kosovo	8	Ukraine	40
Kyrgyzstan	8	Uzbekistan	17
Latvia	10		

Specific infectious diseases were updated in the majority of the 274 lectures (Table 3). However, related topics such as epidemiology and prevention, molecular epidemiology, analytic methods in epidemiology, study design and data management of clinical research were also reviewed. In general, 70-80% of lectures were new from the previous year. In 1999, the seminar was devoted to "Tuberculosis in Eastern Europe" and 59 pulmonary physicians from 25 countries were invited by OMI to attend. Because of the importance of HIV infection, tuberculosis and hepatitis in these countries, these topics were updated every three to four years. In 2009, the seminar was centered on "Global Infectious Scourges" (defined as a means of inflicting suffering by magnitude and severity) that included HIV infection and AIDS, tuberculosis, hepatitis B and C, malaria, Dengue fever and antimicrobial resistance.

In addition to the Seminars in Salzburg, efforts were made to "extend and expand the clinical program" (AAF). A handout that

Table 2. Clinical cases presented as unknowns in small group settings

Central nervous system infections	Herpes simplex type 1 encephalitis *Streptococcus anginosus* brain abscess *Staphylococcus aureus* epidural abscess Chronic frontal sinusitis and cranial epidural abscess
Pulmonary infections	Bacteremic serotype 3 pneumococcal pneumonia Influenza A pneumonia with underlying mitral stenosis *Chlamydophila psittaci* pneumonia *S. anginosus* aspiration pneumonia associated with nocturnal seizures Multilobar consolidated primary tuberculosis
Vascular infections	*S. anginosus* endocarditis with splenic abscess secondary to septic emboli *Cardiobacterium hominis* endocarditis Atrial myxoma mimicking mitral stenosis and infective endocarditis
Enteric infections	*Escherichia coli* 0157:H7 hemorrhagic colitis *Cyclospora cayetanensis* enteritis
HIV infection and AIDS	Brain abscess due to toxoplasmosis CNS lymphoma Histoplasmosis
Miscellaneous	Fever of unknown origin with mediastinal lymphadenopathy due to extrapulmonary tuberculosis Babesiosis Chronic granulomatous disease secondary to congenital immunodeficiency

included biosketches of faculty, as well as photos and addresses of faculty and fellows, and a CD of the lectures and the EPIINFO program were provided by the AAF. The Infectious Diseases Seminars also provided a syllabus containing a summary and selected reprints (preferably by the faculty member) of each lecture topic, the New York Presbyterian Hospital Infection Control Manual, a 62 page updated Antimicrobial Therapy Manual (written by myself and Dr. Barry Hartman, a seminar faculty member) that was distributed annually to Cornell medical students, and a partial list of WEB-Links for important infectious diseases activities. These materials provided an opportunity for fellows to share the information disseminated at the seminar with

colleagues at their home institution ("multiplier or ripple effect"). Of interest, the Antimicrobial Therapy Manual was subsequently translated into Russian in the Ukraine and into Romanian by previous fellows.

Table 3. 274 lectures – category of topics

Topic	Lectures	Topic	Lectures
HIV infection and AIDS	48*	Infective endocarditis	3
Tuberculosis	47**	Fungal infections	3
Nosocomial infections & drug resistance	24	Antimicrobial therapy	3
Emerging infections & zoonoses	14	Fever & fever of undetermined origin	3
Immunosup-pression	12	Diagnostics in infectious diseases	3
Hepatitis	11	Bone and joint infections	2
Pulmonary infections	11	Skin and soft tissue infections	2
Enteric infections	11	Bioterrorism	2
Central nervous system infections	9	Intraabdominal infections	1
Protozoa and helminth infections	7	Infectious diseases & women's health	1
Sepsis & toxic shock syndrome	7		
Travel medicine	6	Molecular epidemiology/ EPIINFO	14
Urinary tract infections & STIs	4	Epidemiology & prevention (vaccines)	11
Neonatal infections	4	Design of clinical research studies	11

*Includes the 20 lectures given in the 2000 "HIV infection and AIDS" seminar
**Includes the 30 lectures given in the 1999 "Tuberculosis in EE" seminar
STIs - sexually-transmitted infections

Additional educational programs included Satellite Symposia conducted by invited seminar faculty in the country of previous fellow attendees (travel funds provided by the AAF) and faculty participation in local conferences and Congress, also at the request of previous fellows. For example, in 2011, I was asked to be an Honorary President of the First National Conference on the European Experiences in Surveillance and Control of Nosocomial Infections that was held in Braşov, Romania and presented two state of the art lectures on related topics. Since 2003, I have also had the opportunity to participate in the Bedjanicev Symposia held every other year in Maribor, Slovenia where a number of fellows over the years attended our seminars in Salzburg. In addition to a Satellite Symposium held in both Bialystok, Poland (Dr. Roberts) and Alma Mater, Kazakhstan (Drs. Riley and Gulick), six Satellite Symposia were held in the Romanian cities of Bucharest and Braşov from 2001-2005.

Fellows had the opportunity to participate in collaborative research programs with US faculty scientists that addressed pressing medical issues in their countries (selected articles 1-7). Manuscripts written in English by fellows describing their clinical research were also edited by US faculty. Seminar participants also had both clinical opportunities and research training in US institutions including the School of Public Health at the University of California Berkeley, Emory University School of Public Health, Johns Hopkins University, the Morgan Stanley Children's Hospital, College of Physicians and Surgeons, Columbia University and at Oswaldo Cruz Foundation in Salvador, Brazil. Indeed, a young physician from Sarajevo, who at the time she attended the Salzburg Seminars in 2007 and 2008 was in training, subsequently spent two months studying leptospirosis in Salvador with our collaborator Dr. Albert Ko (Yale University School of Public Health) where both Dr. Riley and Cornell have had ongoing international research programs. This experience was in part responsible for her interest in global health and spending the following four years (2010-2014) in Myanmar working for Médecins Sans Frontières, MSF. She currently is in charge of HIV, tuberculosis and hepatitis C in several countries for MSF.

More recently, a new research facility (Biomolecular Research in Infectious Diseases) is

being built at the National Institute of Infectious Diseases "Prof. Dr. Matei Balş" in Bucharest and additional collaborations are being fostered with Dr. Riley's laboratory and the University of California, Berkeley. In recognition of these educational and research programs in Romania (articles 5-7), Dr. Riley and I received "*Doctor Honoris Causa*" degrees from the Carol Davila University of Medicine and Pharmacy in Bucharest in June 2015.

Over the fourteen years, I believe the Infectious Diseases Seminars had a major impact on the future goals and aspirations of many of the young physicians who attended our seminars, such as the physician described above. For example a physician from Romania wrote "Dear Dr. Roberts, I would like to thank you for the opportunity of participating at the seminar. It was an honor to be able to attend the lectures from some of the best infectious diseases specialists in the world. Thank you for everything; it has been a life-changing experience for me." A pediatrician who attended both the 1996 and 2008 seminars and in the interim became Professor and Division Chief of Infectious Diseases at the Children's Hospital in Tbilisi Georgia and also served as a volunteer in both Africa and the Balkans wrote "The 1996 seminar changed my life". A physician from Bosnia and Herzegovina wrote "Once more I would like to thank you for the excellent organization and quality of lectures at the Infectious Diseases Seminar. Being a participant at the seminar was really excellent and a motivating experience that will surely facilitate my further education and work in infectious diseases". And a Slovakian physician wrote "Dear Dr. Roberts, You are unique in your love to share what you love the most and that is your knowledge. I will never forget what you said to us".

In addition to the educational component of the seminars, the week-long experience also provided an opportunity for physicians from different countries to become colleagues. After the height of the Bosnian War, another physician wrote "I appreciate all your job. Thank you for the opportunity to come and join the seminar. Yes, I take the message home, I will improve my practice but you know what is also important? People from different fighting countries did not talk to each other the first couple of days and they changed! They were walking under one umbrella, laughing and talking peacefully, they became friends! You bring peace to people!!!!" We, the Infectious Diseases faculty, are grateful for the opportunity to have enriched the professional and personal lives of many of the young physicians who attended our Seminars over those fourteen years.

Publications with fellows based on collaborations started from the Salzburg Seminars

1. Krekulova L, Rehak V, Wakil AE, Harris E, Riley LW. Nested restriction site-specific PCR to detect and type hepatitis C virus (HCV): a rapid method to distinguish HCV subtype 1b from other genotypes. J Clin Microbiol 2001;39:1774-80.

2. Krekulova L, Rehak V, Madrigal N, Johnson M, Killoran P, Riley LW. Genotypic and epidemiologic characteristics of hepatitis C virus among recent injection user and nonuser populations. Clin Infect Dis 2001:33:1435-8.

3. Krekulova L, Rehak V, da Silva Filho HP, Zavoral M, Riley LW. Genotypic distribution of hepatitis B virus in the Czech Republic: a possible association with modes of transmission and clinical outcome. Eur J Gastroenterol Hepatol 2003;15:1183-8.

4. Krekulova L, Rehak V, Riley LW. Hepatitis C virus (HCV) 5'NC sequence variants and their association with hepatitis C risk groups. J Clin Virol 2005;32:300-4.

5. Ionescu R, Mediavilla JR, Chen L, Grigorescu DO, Idomir M, Kreiswirth BN, Roberts RB. Molecular characterization and antibiotic susceptibility of *Staphylococcus aureus* from a multidisciplinary hospital in Romania. Microb Drug Resist 2010;16:263-72.

6. Chen L, Mediavilla JR, Smyth DS, Chavda KD, Ionescu R, Roberts RB, Robinson DA, Kreiswirth BN. Identification of a novel transposon (Tn6072) and a truncated staphylococcal cassette chromosome *mec* element in methicillin-resistant *Staphylococcus aureus*

ST239. Antimicrob Agents Chemother 2010;54:3347-54.
7. Hristea A, Olaru ID, Adams-Sapper S, Riley LW. Characterization of ESBL-producing *Escherichia coli* and *Klebsiella pneumoniae* from bloodstream infections in three hospitals in Bucharest, Romania: a preliminary study. Infect Dis (Lond) 2015;47:46-51.

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