Swiss Society for Infectious Diseases (SSI)/ISID Infectious Diseases Research Fellowship Program Final Report

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Before moving to Bern, Dr. Martynova took the position of the Assistant of the Epidemiology Department at the State Vladivostok Medical University in Vladivostok at the Far East of Russia where she received her medical degree and also completed her thesis for Candidate of Medical Science (PhD) in microbiology and infectious diseases. She now continues to work as the Assistant of Epidemiology and Infectious Disease Department at the State Vladivostok Medical University and plans to complete her thesis for the degree of the Doctorate of Medical Science.

During my stay in Switzerland in 2005 I worked under the auspices of Professor Kathrin Muehlemann on my project devoted to the improvement of new methods of molecular diagnostics of pneumococcal infection specifically the problem of pneumococcal infections, and especially of molecular diagnostics of infections, caused by *S. pneumoniae*, one of the broadly spread problems of the modern health service. The morbidity of pneumococcal infections is high throughout the world regardless of income level and social conditions. Russia is no exception, but the obvious problem with the study of pneumococcal infections is the unavailability of lab equipment and extremely low financing of health services resulting in not only low numbers of research groups on pneumococcal infections, but also the low probability of diagnosing this pathogen in the routine work of a bacteriological lab. Being the causative agent of such conditions as pneumonia, otitis, meningitis and many other illnesses, *S. pneumoniae* is still not very often isolated as a pathogen in routine practice. That is why more then 30–40% of all meningitis, pneumonias and others serious illnesses in Russia remain undiagnosed. In addition, with the exception of some data collected in the western part of the Russian Federation, there is no possibility of conducting an epidemiological survey on pneumococcal infections to understand the level of antimicrobial resistance and how often *S. pneumoniae* causes serious diseases. This information could help to organize measures of prevention and also vaccination in the Far East of Russia.

In Switzerland, in the lab of Kathrin Muehlemann, together with my Swiss colleagues, I participated in the elaboration of new methods of diagnosis of pneumococcal infections based on peculiarities of molecular biology of such variable microorganisms as *Streptococcus pneumoniae*. I was also involved in on-going projects on the study of the improvement of serotyping and development of new protocols of epidemiological survey with these methods. I had the unique opportunity to work with the most modern literature on microbiology and infectious diseases and to participate in training courses on infectious diseases given by SSID in Bern, which greatly broadened my knowledge of clinical infectious diseases. Moreover, I was involved in weekly group meetings and journal club sessions, which gave me more ideas on how to better organize the research process at my work place in Russia. I hope that the experience I gained will be the basis of my future thesis for the degree of Doctor of Medical Science, and that our work will be successfully finished with publication in peer-reviewed journals. ❖

I am really grateful to the SSI/ISID Review Committee for the unique and invaluable opportunity to study and work in the Infectious Diseases Institute of Bern University, where I have received the unique practical working experience in my life. Also it was more then invaluable to gain an experience of working in a highly-motivated research group and to understand not only aspects connected with completing of a distinct scientific problem but to learn the experience of organizing of scientific job process at a high level. The experience of study at Bern University with old traditions gave me the opportunity to know about the general level of organizing of high medical education in Switzerland and could help me to apply some of the real achievements of the Swiss medical high school in our University. Also I am greatly thankful to my professor, Kathrin Muehlemann, for careful guidance, to Dr. Lucy Hathaway for assistance in all problems connected with project, and to all my colleagues and personnel of Infectious Disease Institute in Bern who helped me during my stay.