



Establishing Cooperation in Structural Biology

Proposal by Lenka Slachtova

I am in my last year of PhD studies of Biomedicine at 1st School of Medicine, Charles University in Prague, Czech Republic. My research is focused on inherited metabolic disorders manifested mostly during the childhood and adolescence. In my articles I describe and discuss the genetic and environmental factors contribution to the development of the diseases (e.g. hyperbilirubinemia manifestation). Besides the research I am responsible for the molecular genetics diagnostics of these and other disorders which I have designed. Two years ago I spent one month at the Department of Biochemistry and Molecular Biology in Paris and this experience was the initial factor for the applying for this program. Let me explain why. Firstly this experience made me much more effective. I saw the people with many different ways of doing the same thing and could pick up the right one for me. I have learned many new methods, went through different processes and attitudes. I was able to train students with new approaches. But the thing I appreciate the most is the price of contacts and friendships. Even this short term fellowship was much more diagnostically oriented it gave me a taste of important aims. Now I would like to implement them in the scientific field via this program.

I think the Czech Republic has many talented scientists. But sometimes it takes a lot of time to build the contacts and acquire the real skills to become a good researcher after your studies. Thanks to my supervisor who has many international experiences I can see the way I can learn faster. Here in the Laboratory for the study of mitochondrial disorders at the Department of Pediatrics I obtained various technical skills from the molecular biology field and also small experience with the protein techniques. Now I would like to improve myself in the protein structure background given this area is in our lab a little bit aside now. One of the best places to improve the protein techniques and to establish long term collaboration is the laboratory of Professor C.S. Raman in Baltimore.

American Partners:

Professor C.S. Raman is a guru in structural biology. His ancestor C.V. Raman (Nobel prize in 1930) has developed the world-wide used method called Raman spectroscopy in protein chemistry and C.S. Raman is a leader in studying and characterization of the protein structure and function. His lab is a very good training center for young researchers and he collaborated on several projects with my supervisor Professor Martasek. Realizing the missing protein oriented expert in our lab we contacted Professor Raman to provide the background for the advanced training in protein structure at the Department of Pharmaceutical Sciences at University of Maryland. His invitation that I am more than welcome to come and to work in his lab during the program promises good beginnings.

Objectives:

The main objectives of the program are: to take an advanced training course of protein structure research, to learn new methods and establish them in my home lab; and to strength the cooperation between the home and host institutions.

Detailed Description:

The internship I am applying for will last three months of the training at the Department of Pharmaceutical Sciences to achieve the intense laboratory training in protein structure and analyses. I will become familiar with laboratory equipment and protein techniques. Three months of the stay are adequate not only for the basic knowledge but also for performing of own analyses.

In future, this face to face cooperation with the scientists with very good reputation will be very helpful (e.g. enhance the chance for funding support in my home institution).

Organization and Time Schedule:

Program of laboratory training and establishment of the close cooperation in Structural biology will take part at the beginning of the August 2013. The person responsible for the training at the University of Maryland is Prof. Raman. The end of the summer and autumn is good time for the training regarding the more smooth administrative and grant applications period.

Program Cost:

Expected costs:

Item	Cost in US\$
Executive training seminars	0
Internship	0
Administrative fees (visa, registration fees, etc.)	400
International travel	800
Local transportation 120x3	360
Medical insurance	635
Monthly maintenance 750x3	2,250
Contingency	300
Total	4,745

Program Benefits:

From the attendance of the program I expect the following:

1. Acquire advanced skills in structural biology; To transfer the acquired knowledge to the students.
2. Build and transfer close cooperation on individual research levels as well as on institutional level.
3. Enhance the facility knowledge and to be able the build the necessary background in home laboratory.

4. Improve the presentation skills written and oral in scientific oriented English.
5. Thanks to the zero costs of the training seminars or internship (thanks to Professor Raman) the final costs are low compared to costs of the programs funded by AFCSLS in last years. Benefits in personal and professional level experience is much more higher than input costs (e.g. If the only thing I improve would be my English the costs return with the writing few articles without the correction payment)

Risks:

Different strategies in research and innovation development in hosting and home countries result in different quality and level of facilities and lab equipment. Not every approach is transferable to home institution. I am aware that here in Prague we cannot effort all the equipment I will see in the lab of Professor Raman. But my goal is to build the new bridges between two laboratories and link the experiences of both institutions.

Thank you for the possibility to apply for this program.