

June 13, 2013

## **UW Global Perspectives Fall 2012 Grant Program Award Report Donald L. Jarvis, Professor, Molecular Biology**

My proposal to the Fall 2012 Global Perspectives Grant Program entailed a request for support to present a short course on baculoviruses and baculovirus-insect cell expression system technology in the Central Department of Microbiology at Tribhuvan University in Kathmandu, Nepal. I originally proposed to travel to Tribhuvan University (TU) during the Summer of 2013 to present this lecture/lab course and interact closely for about a week with students, staff, and faculty in TU's Central Department of Microbiology.

Between the time I wrote this proposal and the time it was funded, I also had planned to travel to Wuhan, China. I had been invited to present seminars on the baculovirus-insect cell expression system at the Wuhan Institute of Technology and Wuhan Institute of Virology (Chinese Academy of Sciences). However, I was stranded at the Denver airport at the beginning of that trip due to a long weather delay in my outgoing flight and ultimately had to cancel. Thus, I worked with concerned parties and arranged to couple my proposed trip to Nepal, which was generously supported by the Global Perspectives Program, with a second attempt at my trip to Wuhan, which was supported by the Wuhan Institute of Technology. The final trip comprised about one week in Wuhan and about one week in Nepal with two travel days on each end. I am pleased to report that coupling these trips reduced UW's cost for the Nepal trip by nearly half, as the Wuhan Institute of Technology provided half the airfare and all my expenses while in China.

I started my professional interactions in Wuhan, with a day of visiting faculty and students and giving a talk at the Wuhan Institute of Technology. Unfortunately, my luggage was lost during a stopover in Beijing and did not arrive until later that day, so I had to wear travel clothes, which were not my choice for my visit and lecture on that day. Nevertheless, my host was Dr. Youhong Zhang, Head of the Department of Biochemical Engineering. I interacted closely with Dr. Zhang's lab group and several members of his Department that day. I received a warm Chinese-style welcome and had a large audience for the talk. I also had the opportunity to interact closely with Dr. Miao Yun-Gen, who is at the Zhejiang Agricultural University in Hangzhou, China and had been a visiting scientist in my lab at UW. Dr. Miao kindly traveled to Wuhan together with one of his students so we could see each other and they could attend my talk. Once I returned home, I received a request from Dr. Miao to consider his student as a candidate for graduate training (Ph.D.) at UW and I referred her to the MCLS program, to which she will apply in the Fall. After my talk, the President of the Wuhan Institute of Technology, Dr. Li Jie, hosted an elegant Chinese-style lunch, at which we interacted closely. This lunch also generated discussion of a potential postdoctoral position for Dr. Xingzhou Chen, a WIT faculty member, in my lab. Dr. Chen and I spent the next two days touring the Three Gorges area in YiChang with an interpreter. I have included a few pictures of that expedition in the photo Appendix. We then returned to Wuhan, where I had dinner with several more WIT faculty, including Dr. Zhang, and members of their Foreign Affairs Department, including Dean Melody Lee. My visit to WIT ended with offers to collaborate and requests to host WIT students for graduate work in my lab at UW. In addition, I received Dr. Chen's application for a postdoctoral position in my lab when I returned home from my trip

I spent the next day at the Wuhan Institute of Virology. My host was Dr. Li Zhihong, Associate Director of the State Key Laboratory of Virology and a colleague in baculovirology for many years. I had the opportunity to interact closely with Dr. Li and several members of her Department that morning. Dr. Shu Shen and others showed me amazing images of single virus particles in living cells, which were obtained using a “super-resolution” microscope. This led to a detailed discussion of how our labs could mutually benefit from a collaboration that would involve using that microscope for one of my lab groups’ ongoing projects and I am now pursuing that potential opportunity. After our morning interactions, I gave my second presentation and received excellent questions from an engaged and well-informed audience. I subsequently attended Dr. Li’s lab group meeting and heard oral presentations from two of her colleagues, including Dr. Shen. Dr. Li hosted a late, elegant lunch and then Dr. Shen and another scientist took me for a local tour and a late dinner, prior to my late departure for Nepal.

Upon my arrival at the Hotel Vajra in Kathmandu, I met Dr. Mohan Dangi, a native Nepali who trained at UW under Professor Pete Stahl and is now an Assistant Professor at Cal State Fresno. I also met his student and convinced him to consider the UW MCLS Program for his proposed doctoral studies. We had lunch and dinner together and, that evening, Dr. Dangi arranged a meeting with the former Prime Minister of Nepal, Jhala Nath Khanal, and we had tea and discussion at his house. He explained the evolution of his government, which is ongoing and involves a change from a Monarchy to democratically elected leaders. He asked very pointedly why I was there and how I could help the people of Nepal. I told him I was there to teach in the area of biotechnology and medicine and that his country would benefit from an educated population that could potentially start new companies and produce their own medicines (Nepal currently obtains all its vaccines and many other medicines from India). We had a great interaction and left on excellent terms.

The next morning, I met my TU host, Dr. Dwij Bhatta former Head of the Central Department of Microbiology and his wife, Dr. Luna Bhatta Sharma, a faculty member in the Microbiology Department at the Kathmandu Institute of Science and Technology (KIST). I learned our teaching plan had changed quite a bit (that happens a lot in Nepal!) and that I could expect to meet faculty and students and give talks at both TU and KIST, but they would be shorter than originally planned and there would be no labs. Ultimately, that is precisely what happened. I met the “Principal” and all of the faculty of Microbiology at KIST, gave a talk, and interacted with many KIST students inside and outside of class. I also met the President of TU, the current Head (Dr. Singh) and all the faculty of the Central Department of Microbiology at TU, gave a talk, and interacted with many TU students inside and outside of class. Afterwards, I had an extended lunch and more interacts with Drs. Bhatta and Bhatta-Sharma. The outcome was that Dr. Bhatta-Sharma, who is an experienced virologist, will likely join my lab at UW for postdoctoral training in the near future, assuming I can secure funding for her position.

I argued in my proposal that this project would contribute to the general UW goals of increasing “engagement and outreach activities” by enabling the dissemination of basic research results obtained within the College to an International community of microbiologists. I clearly achieved this goal through the four presentations at four different Institutions in two foreign countries. Disseminating our results and the new technologies they have created contributed directly to Action Item 7 of Academic Plan 3 (“support internationalization”). In addition, the lectures and other interactions with undergraduate

---

students, graduate students, and faculty at WIT, WIV, KIST, and TU clearly provided an outstanding recruiting opportunity, which contributed directly to Action Item 11 of Academic Plan 3 (“increase number and quality of graduate students”), and also to ongoing efforts to recruit Postdoctoral researchers to UW. In all, I received two postdoctoral applications (Dr. Chen from WIT and Dr. Bhatta-Sharma from TU) and three requests for graduate studies in Molecular Biology (Shuang Liang from Zhejiang University; Chiyang Siya Ping Lama and Rabin Paudyal from TU), the latter of which were referred to the MCLS program. In addition, I will be establishing a collaboration with Dr. Hu at the WIV, which will facilitate the completion of an ongoing project in my lab and enhance our efforts to attract extramural funding for our research at UW.

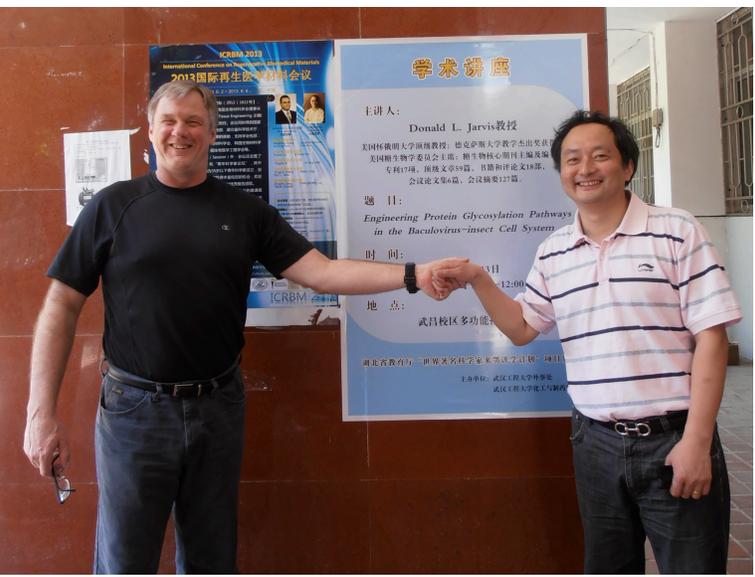
### **Project objectives (completed):**

- ✓ Disseminate new research findings from the College to an International peer group.
- ✓ Interact with an International peer group to create new collaborative research opportunities.
- ✓ Establish a linkage between microbiology in the College and at Tribhuvan University.
- ✓ Recruit new, International graduate student prospects to the College.

### **Photos:**



Out Side banner for WIT Talk Wuhan



Dr. Jarvis and Zhang WIT



Temple above Yangtze River Three Gorges China



Three Gorges China



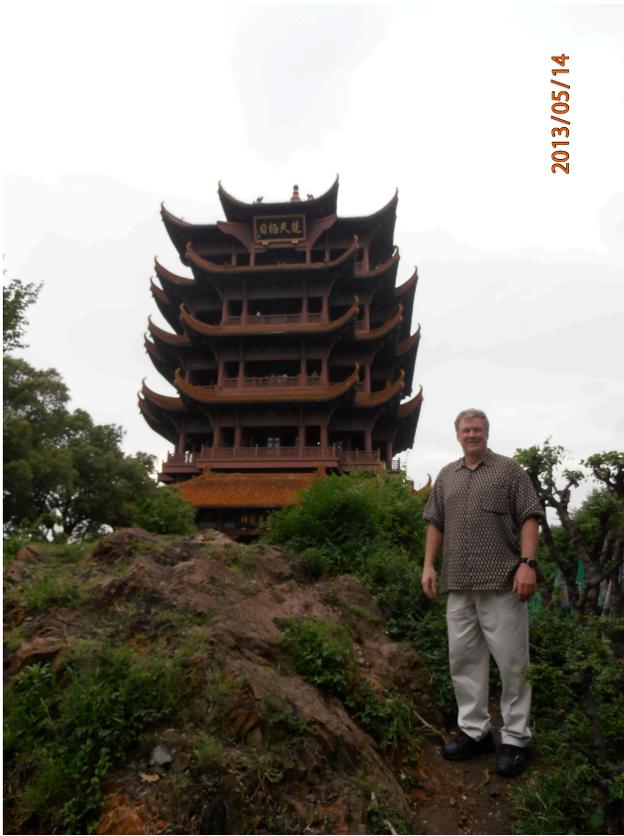
Kathmandu from Monkey Temple



Buddhas at Monkey Temple



Ancient wedding Ceremony, Three Gorges China



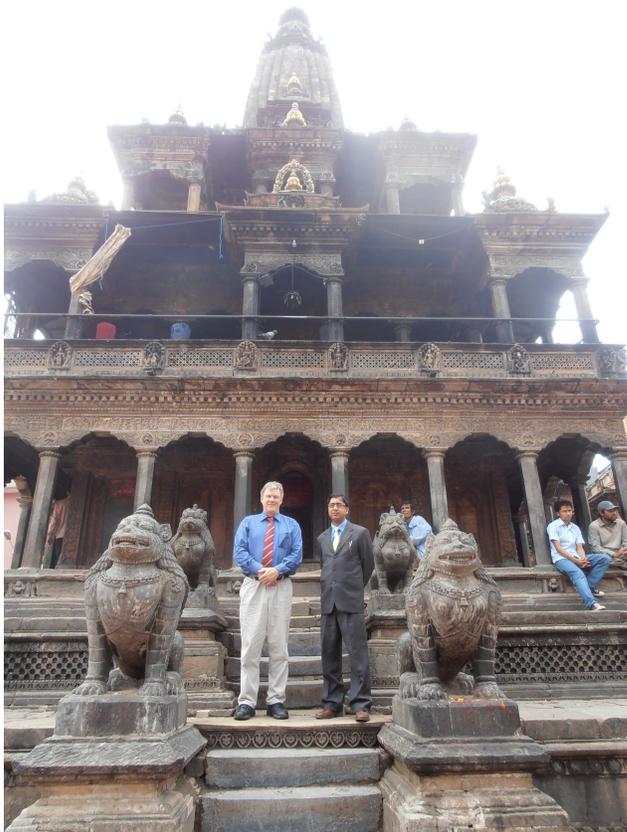
Dr. Jarvis below Yellow Crane Tower, Wuhan



Sundown at the Monkey Temple, Kathmande Nepal



Working the fields the hard way, Pokhara



Dr. Jarvis and Bhatta at Temple in Kathmandu



Classroom pre-lecture KIST