UMSAEP Report: Carole McArthur M.D.,Ph.D.

Report on the visit to the University of Western Cape, South Africa and to Mwandi Mission Hospital.

Background and Objectives:

The goal of this visit was to strengthen an on-going collaboration between Dr Charlene Africa in the Department of Medical Biosciences at UWC, and Dr Carole McArthur in the Department of Oral Biology at UMKC. Dr Africa visited Dr McArthur’s molecular biology laboratory in Kansas City on two previous occasions during the past 5 years, supported by USAEP, for collaborative research on the mechanism of salivary gland disease. Salivary gland disease occurs in HIV and in autoimmune diseases. This resulted in two publications (McArthur et al 2003, Wang et al 2009).

The goals of this recent USAEP award was for Dr McArthur to visit UWC: 1) to finalize additional results to supplement a publication (Wang et al 2009); 2) expand and stimulate collaboration on traditional medicines between UMKC, Dr Africa and Dr Jeremy Klaasen; 3) expand and stimulate collaboration on UMKC propolis extracts between Dr McArthur and UWC groups, and; 4) connect all groups in SA with our connections in Cameroon and Zambia. The overall goal was envisioned to be achievable within the framework developed at UWC by Dr William Folk at UM and researchers such as Jeremy Klaasen and his group at UWC, as well as researchers at Stellenbosch University. These new connections would provide access to well characterized and unique TB isolates for Dr Klaasen to evaluate extracts of *Artemesia afra* and other plants provided by his group, and obtain Candida clinical specimens and propolis extracts for Dr Charlene Africa and her group. The third goal was to initiate discussions between Dr Patrick Bouic at Stellenbosch and UMKC to collaborate on the characterization of propolis provided to be provided to him by Dr McArthur at UMKC.

Dr McArthur has developed, obtained funding for, and Directed an HIV/TB research facility in Cameroon over the past 10-14 years, where she also collaborates with a large group of traditional healers.

In Cameroon Dr McArthur’s research program supports a TB diagnostic facility with culture and identification via contracts with corporate groups creating an
environment which is ideal for UWC to evaluate phytotherapies for activity against TB and to carry out clinical trials. A second important goal therefore was to initiate collaboration between Dr McArthur’s TB research facility in Cameroon and UWC in the area of traditional medicines. The establishment of connections with Cameroon and Zambia also fulfills the Mission of global Partnerships such as WHO and the CDC to strengthen internal connections within the African continent.

I had initially planned to meet with Dr Christian van Niekerk of the Global Alliance for TB Drug Development on the evening of arrival in Johannesburg. He was unable to make it and thus we rearranged to meet at the World Union Lung meeting in Mexico December 2009. My visit to Mwandi moved forward as planned the next morning and Dr Parr picked me up at Livingstone Airport and I spent 10 days working in the laboratory and seeing patients in the Mwandi hospital. I saw more than 100 TB/HIV patients, most at Stage IV disease, and spent 3 days evaluating the laboratory quality control and the TB support for the surrounding area. There is some resources provided via the CDC but still the resources are abysmally inadequate. It is, however, an ideal and relatively close facility for UWC to obtain clinical specimens and Dr Parr has enthusiastically agreed to provide support for visitors wishing to collaborate. Upon arrival in Cape Town in the evening of the 1st of October, I traveled by taxi to the Waterkant area to my accommodation and was picked up the following morning by Dr Africa who took me to Stellenbosch to meet with Dr Parick Bouic. I toured the institution and found the meeting was stimulating and suggested many areas of mutual benefit. Dr Patrick Bouic is the Director of a company with strong links to Becton Dickenson in the US. I was impressed with his bioreactive assay technical expertise and could envision a great collaboration to evaluate propolis on the metabolome of MTB using his fermentation system of microfibers. He agreed to sign an MTA with UMKC to receive some of our isolated propolis fractions.

After leaving Stellenbosh, on October 2nd, I went with Dr Africa to UWC to meet Dr Pierre Mugabo, a TB researcher who was also interested in obtaining clinical samples from Dr Parr at Mwandi. This meeting was very positive and he was enthusiastic about connecting with Dr Parr. This was followed by a meeting with Jan Persens for lunch and arranging to meet with Dr Quentin Johnson on Saturday morning and Renfrew Christie, Dean of Research at UWC.

On Saturday morning 3rd October, I spent about 1 hr with Dr Quentin Johnson who provided the history of TICIPS from his perspective. During a Video Conference from UMKC earlier the previous month I had agreed to this meeting
and to give a presentation on my HIV genetic research in his department on Monday 5\textsuperscript{th}. The remainder of the afternoon, I spent driving around Cape Town with Dean Christie who I found a very colorful, interesting and dynamic character. During this time, significant time was spent discussing the arrangements and opportunities for UWC students and faculty in Cameroon.

On Sunday the 4\textsuperscript{th} October, Dr Africa and a colleague from the UK took me to Stellenbosh town where we spent the afternoon talking about the research projects in Cameroon and at Mwandi and future potential.

On Monday 5\textsuperscript{th} October, Dr Africa took me to UWC to meet with Joachim Jacobs who is part of the HIV and viral group and Drs Edmund Pool and Bertrum Fielding. I also met several of Joachim’s colleagues in the social science group at the UWC HIV research Center, including the new Director Dr Chritina Zarowski, recently recruited from Canada. I arranged to meet with her again on the 6\textsuperscript{th} to discuss the research center and its objectives. Dr Africa and I resolved the minor remaining issues on our collaborative paper which has now been published (Wang et al, 2009).

At 12.00pm on the 5\textsuperscript{th} October I presented a seminar in Quentin Johnson’s department on the results of about 10 years of genetic studies of HIV sub-types in Cameroon. After this presentation I met members of his group including Dr Jim Syce, a collaborator of Dr Bill Folk’s.

On Tuesday 6\textsuperscript{th} October, I met with the Director of the HIV center, Dr Zarowsky, and spent about an hour discussing potential for her students to travel to Cameroon and was provided with the business plan and strategic directions she had recently completed. I found Dr Zarowsky an enthusiastic, affable and energetic potential colleague who I hope to connect with some of our social scientists at UMKC in the department of Social Work. That afternoon I had a prearranged meeting with the Vice Chancellor of UWC but he had to go out of town unexpectedly and canceled the meeting with me unfortunately.

During the afternoon of the 6\textsuperscript{th} of October I presented another seminar in the Department of Medical Biosciences which was followed by an afternoon of planning meetings with Dr Jeremy Klaasen, Raymond Daniels and Charlene Africa. Professor Green’s Ph.D student will be going to my lab Cameroon in December to plan for a longer visit in March 2010. I also met two of Dr Africa’s PhD students who desire going to spend time in the Cameroon lab.
I returned to the US on the 7th of October after a most productive visit. Since my return I have been working with UMKC and UWC to develop the appropriate legal MTAs required for transfer of materials in both directions for study.

The approximate cost was $2900 of the $5600 awarded.

**Itinerary:**

19th September US- Johannesburg-Mwandi Mission Hospital

30th September - 7th October Mwandi - Capetown

7th October 2009 Cape Town to Kansas City.

**References:**
