Advanced Research Scholar – Post-doctoral

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Field of Study:	*Natural Products Chemistry*
Research Period	*August 2016 – August 2017*
US University	*Virginia Polytechnic Institute and State University*
US Professor	*Dr. David G. I. Kingston*
Research Title	*Search for bioactive compounds from Philippine plants with anticancer activity*

Describe your research conducted in the US.

The research aims to identify compounds from Philippine plants that have anticancer activity. The plant samples were selected medicinal plants collected from Giporlos, Eastern Samar. The samples were consisted of 31 extracts from 17 different plants. The extracts were screened for their anti-proliferative activity against A2789 human ovarian cancer cell line. The extracts were also tested for antimalarial activity using the Plasmodium falciparum Dd2 strain.

What was the highlight of your research in the US?

In the first phase of my research, I was able to work on the anti-proliferative and anti-plasmoidal activities of Garcinia dauphinensis which was collected from Madagascar. Seven of the 17 compounds isolated from the plant root were identified to be new compounds.

For the Philippine plant studies, I was able to obtain the following results: (1) the screened plants showed weak to moderate growth inhibitory activity against the A2780 cancer cell line, (2) betulinic acid isolated from the relatively active extract of *Alphitonia sp*. *Arcanglesia flava* showed strong anti-plasmoidal activity which supports previous studies, (3) Palmatine and jatrrorhizine are two alkaloids which can be isolated from *Alphitonia sp*. *Arcanglesia flava*, and (4) for the first time, four known compounds were isolated and identified from the leaf extract of *Leucosyke capitellata*. These compounds are kaempferol-3-O-glucoside (astragalin), isorhamnetin-3-O-glucoside, triterpenoids maslinic acid and corosolic acid.

In what way has the USAID scholarship changed you?

The USAID scholarship gave me great opportunity to experience the research culture in US. I learned more research techniques that I can apply in my laboratory. Furthermore, I gained insights on how to manage a laboratory.

How would you use the knowledge and skills gained through your research to contribute or influence economic growth in the country?

The knowledge and skills I gained through my research in Virginia Tech will be used in my plan to have my own laboratory in natural products chemistry. There is still a need to study the potential of natural resources, particularly those found in Eastern Visayas, as sources of biologically active compounds. Health is an important aspect in economic growth and finding alternative medicine for new emerging diseases will have a great contribution. Moreover, natural resources can also be tapped to discover new agents to eradicate pests and improve the growth of plants and animals used in agro-fisheries activities. Improving the agri-fisheries sector will also help boost economic growth.

As a young scientist, what do you envision for the Philippine science, technology and innovation ecosystem in the next 10 years?

I envision that in the next 10 years, the Philippines will reach the required number of scientists/researchers for every million Filipinos, as suggested by UNESCO. Increasing the number of scientists will further increase the research endeavors in the country, thus attaining faster growth and development.

Dr. Rolly is currently the Vice Chancellor of Research and Extension at the University of the Philippines Visayas.

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