

## Advanced Research Scholar – Grants-related

### Rainie Rich Chucky Yambao

University of the Philippines Los Baños



**Field of Study:**  
**Research Period**  
**US University**  
**US Professor**  
**Research Title**

*Transcriptomics*  
*May – December 2017*  
*University of Illinois at Urbana-Champaign*  
*Dr. Juan Loor*  
*Comparative analysis of the milk transcriptome of Sahiwal-Holstein cows fed with two different diets.*

#### Describe your research conducted in the US.

The research aims to evaluate changes in the physiological state of lactating cows given different total mixed ration (TMR) formulations in relation to milk production by analyzing the milk transcriptome through RNA Sequencing. Changes in gene expression between cows fed different TMR formulations will be related to milk production and quality.

#### What was the highlight of your research in the US?

I was able to observe and perform some techniques in gene expression and nutrition studies (i.e. RNA extraction, qPCR and enzyme assays). I also attended an Introduction to Linux and Biocluster class in preparation for high performance computing required in RNA Sequence analysis and studied some basic bioinformatics analyses for RNA Sequence data using online resources from the University.

#### In what way has the USAID scholarship changed you?

This scholarship has given me the opportunity to acquire knowledge and skill required to perform transcriptomics and other related techniques for my future researches which I am very eager to share with my colleagues and to the future scientists/researchers. I became familiar with the necessary facilities and equipment required in performing these techniques which will be helpful for the possible establishment of a laboratory in our institution that can accommodate these techniques.

The scholarship also provided a network for the scientific community where I am looking forward to work with in my future projects. Granted by this scholarship, I became more inspired to perform researches in my chosen field. I will strive to learn more in this field to become a better researcher and for me to be able to serve my country better.

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

I will apply these skills in my future research that aims to improve reproductive efficiency in dairy cattle (i.e. assisted reproductive technologies). I can also collaborate with other researchers in the conceptualization and conduct of researches that require the techniques that I have learned in the US with the hope that these researches can lead to innovations that would improve animal production.

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

Hopefully, the research community in the Philippines will expand in the next few years. With the development of research tracks/ subjects for Senior high school students, the young generation may become more enthusiastic to do research and aspire to become scientists/ researchers who will actively conduct researches in their field of interest. With the growth of the Philippine research community, they will be able to share insights and form research collaborations not only among themselves, but also with foreign researchers to generate robust researches. In the next ten years, researchers will still strive to develop technologies that will provide solutions to the challenges in different Philippine industries and will contribute to economic growth.

*Chucky is finishing his Master's degree in Animal Science at the University of the Philippines in Los Baños, Laguna, where he plans to utilize the new techniques he has learned from his research in the US.*