

Advanced Research Scholar – Grants-related

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Field of Study:	<i>Bioinformatics and Biostatistics</i>
Research Period	<i>February – July 2017</i>
US University	<i>Iowa State University</i>
US Professor	<i>Dr. Rohan Fernando</i>
Research Title	<i>Cattle Genome Data Analysis and Genome-wide Association Studies</i>

Describe your research conducted in the US.

The Cattle Genome Data Analysis and Genome-wide Association Studies (GWAS) research training aims to use bioinformatics tool to fast track genetic improvement of the Philippine Siquijor native cattle into a dairy cattle breed.

What was the highlight of your research in the US?

Overall, the research training was able to “bridge” the specific knowledge gap on GWAS, Big data analysis and Genomic Selection. I was introduced to the potential of GWAS and key strategic considerations in designing and performing association studies for mapping specific genes in target individual. The training was able to cover the fundamental assumptions, showcase recent successes and discuss limitations of current GWAS approaches in the field of animal breeding. It was also able to provide ‘hands-on’ experience on large-scale genetic data analysis, using standard analytical approaches and freely available software tools.

In what way has the USAID scholarship changed you?

The highlight of my research was being able to experience large-scale genetic data analysis using standard analytical approaches and software tools. I was introduced to the potential of GWAS and its key strategic considerations in designing and performing association studies for gene mapping. I also learned the fundamental assumptions, recent successes, and limitation of the current GWAS approaches which is important in developing an appropriate breeding program for livestock improvement.

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

As part of the University of the Philippines it is our mission to commit ourselves to advance inclusive growth through education, research and public service. Through our existing research projects in omics and breeding, the knowledge and skills that I gained through my research will provide a better understanding on complex traits and genes influencing them and use it to improve economically important crops and livestock which translates to higher profit for the Filipino farmers, thus influencing the economic growth in the country.

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

In the next 10 years, Philippine science, technology and innovation ecosystem will be globally competitive. Leading the advancement and innovation in the field of agriculture, providing answers to complex diseases and more importantly promoting scientific research to alleviate poverty and solve food sustainability.

Julianne is currently working as a University Researcher at the University of the Philippines in Los Baños, Laguna.

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