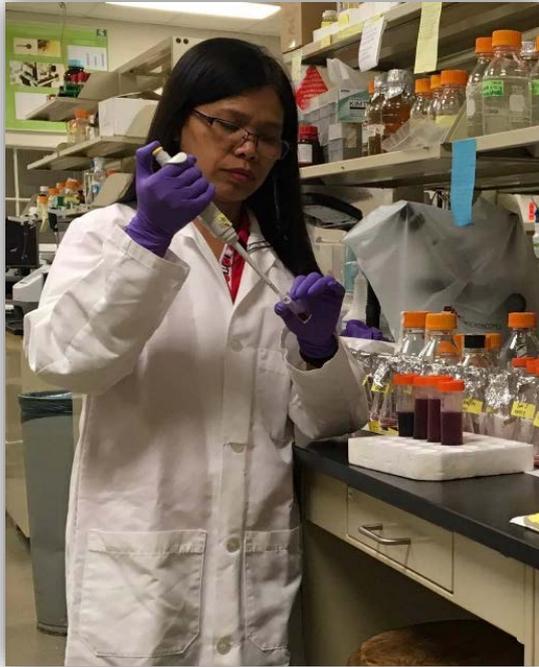


Advanced Research Scholar – PhD Dissertation

Flora Maitim-Yrad

Silliman University / University of San Carlos



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

Nano-biosensor
April 2017 – March 2018
Michigan State University
Dr. Evangelyn C. Alocilja
Development of Lateral Flow RNA Biosensor for Dengue Detection Using Oligonucleotide Functionalized Gold Nanoparticles

Describe your research conducted in the US.

My research is about development of lateral flow biosensor for detection of Dengue RNA. It is a paper-based assay that uses gold nanoparticles to visually detect the presence or absence of dengue virus. This study hopes to achieve promising applications in providing rapid, portable, and affordable detection of dengue virus in human blood samples and mosquitoes.

My research aims to:

- Synthesize, characterize and functionalize gold nanoparticles
- Design and optimize biosensor in lateral flow assay format
- Detect dengue RNA in the matrix of human blood and mosquito samples

What was the highlight of your research in the US?

The highlight of my research is the last phase which involved proof-of-concept detection of dengue virus in the matrix of human blood and mosquito samples. The success would further open venues for developing rapid, simple and cheap Dengue diagnostic device for healthcare needs.

In what way has the USAID scholarship changed you?

USAID scholarship has widened my academic perspective of education, improved my cultural practice and personality. Being a visiting scholar here in Michigan State University (MSU) where research is an everyday life, I realized the importance of incorporating research in learning activities. Students doing research are more engaged in learning, apply their knowledge in solving problems, more creative and innovative. My immersion in American society with straightforward culture mixes with my indirect and reserved Filipino culture. It helped me become frank yet tactful.

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

My plan is coded STS which stands for SHARE, TEACH and RESEARCH.

- I will SHARE my research results to academic and industrial audiences to spark interests on biosensor.
- I will TEACH to transfer my knowledge and skills to the academe people especially the young minds.
- I will RESEARCH and collaborate to gear up and encourage more people to experiment, discover, and innovate.

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

The economic growth of the Philippines is challenged by its low technological advancement. As a scientist, I envision that if research and development are strengthened now, the next ten years will be brighter and promising. Where research is the very center and source of new knowledge, the transfer and application of this new knowledge translate to product development and innovation.

Upon her return to the Philippines, Flora plans to share the knowledge she gained on lateral flow nano-biosensor technology with the academic community at Silliman University where she is a professor.

E-mail: floramyrad@su.edu.ph