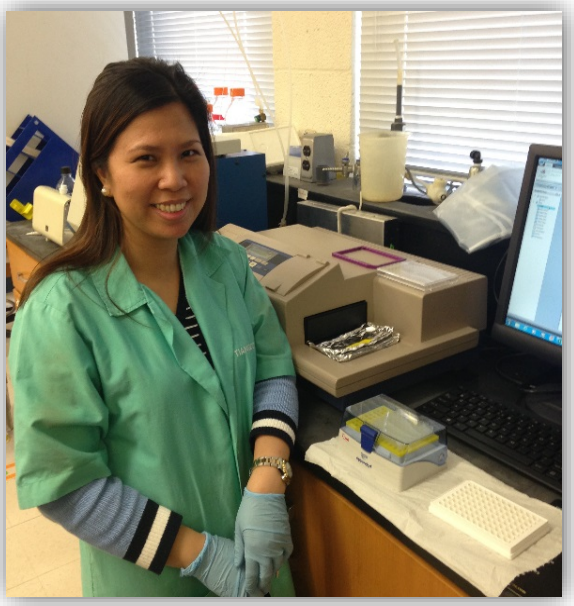
Advanced Research Scholar – PhD Dissertation

Cristina Tiangco, Ph.D.

University of Santo Tomas



Field of Study:	*Chemistry / Chemical Engineering*
Research Period	*February 2015 – February 2016*
US University	*University of Maryland Baltimore County*
US Professor	*Dr. Leah Tolosa*
Research Title	*Development of Noninvasive Glucose Sensing System based on Glucose Binding Protein*
Publication(s)	http://www.sciencedirect.com/science/article/pii/S0925400516318755 https://link.springer.com/article/10.1007%2Fs00216-017-0289-7

Describe your research conducted in the US.

The main goal of this project is to develop a noninvasive glucose sensing system that is (1) non-invasive/painless; (2) more accurate and sensitive than current sensors; (3) easy to use by staff; (4) produces quick results.

My research has shown that it is possible to collect glucose by placing a small amount of buffer on surface of the skin and allowing glucose to diffusive passively through the skin over a short period of time. Since transdermal glucose has very low concentrations compared to blood glucose, our group worked on extremely sensitive with high specificity, glucose binding protein (GBP) as biosensors.

What was the highlight of your research in the US?

Aside from learning new technologies and how research is being conducted in the US, I also enhanced my presentation skills by sharing my research outcomes with different experts and practitioners in the field of Chemical sensors and biosensors through four international conferences. Moreover, I have written and published three papers on my research in international journals.

In what way has the USAID scholarship changed you?

The scholarship from USAID was a great opportunity for faculty members like me who were in need of research funding to do our dissertation. More so, the scholarship also gave me the chance to learn new technology and experience how it is like working with experts in different fields. I have learned a lot, and was able to show that we Filipinos can also excel given that same opportunity. I became more productive, more driven and focus on my goals.

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

My research area is on biomedical sensors. The long-term objective of our study is noninvasive glucose sensing system for neonates and this could be a great help in the field of diabetes monitoring. My US mentor and I are still planning to continue my research and further improve what we have started. Currently, I am now a resident researcher in our university where I will use the skills that I gained from my US research not only to continue the research I have started but also to apply for research grants and do Post-doctoral research.

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

As a young scientist, the current situation is very promising as the government and other agencies are helping students, faculty members and innovators to come up with good projects that will benefit the Filipino people.

Cristina is working as Assistant Professor and Faculty Researcher at the University of Santo Tomas where she also obtained her PhD degree in Chemistry after completing her research in the US.

E-mail: cetiangco@gmail.com