Advancing Nursing Science in the 4th Industrial Age: Journeying in eHealth

Prof. Michael Joseph S. Diño is a Nurse Educator, Researcher and Innovator. Currently he serves as the Director for Research Development and Innovation Center at the Our Lady of Fatima University in the Philippines. He serves in various local Nursing organizations, and internationally as the President-Elect and Program Chair of the Phi Gamma Chapter of Sigma Theta Tau International Honor Society in Nursing – the second largest professional Nursing organization around the world.

Being a nurse and scientist is my childhood dream. I always envision myself working at healthcare institutions and with the communities to provide quality care while doing scholarly work to understand the nursing profession and advanced nursing science. I am also passionate in teaching and serving the community through service-learning. I am always fascinated with everything health, science of life and human development, technology and serving the people.

Michael during his undergraduate years. He graduated from the Bachelor of Nursing Program of the Our Lady of Fatima University

Completing a Nursing Degree for me is a life achievement. After finishing my preparatory basic and secondary education in the Philippines with flying colors, I took up Nursing at the Our Lady of Fatima University (the first Level IV Nursing Program in Manila) to fulfill my childhood dream. Being a nursing student from a developing country, I have learned to balance studying, clinical exposures and being a working student in the Information and Technology (I.T.) Department of the university. I was immersed in a variety of clinical cases in various Nursing areas while understanding the dynamics of the healthcare field including third world problems and social and political issues impacting healthcare delivery. My most remarkable experience as a student nurse is working with our adopted community. It feels good to work with community clients, classmates, instructors, I.T. friends, and community leaders. I enjoy empowering people to become better and self-reliant. I organized community programs for health as a student community volunteer. No wonder, my undergraduate theses utilized community-organizing participatory action approach focusing on health practices and behavior modification using mobile devices (Short Messaging System). Being exposed to these experiences and challenges made

me love Nursing further while aspiring to become a future leader to address issues of healthcare access, divide and inequality.

During his early career, Michael has co-authored a lot of technology products including the development of a game (Health Hunt) to teach schoolers the importance of nutrition and balanced diet.

Working as a Nurse is life-changing, life-long and life-wide learning. Passing the Philippine Licensure Examination in 2005 opens the opportunity to work in a tertiary hospital in the Philippines while pursuing my Masteral studies. I was also given the chance to join the College of Nursing of the Our Lady of Fatima University where I am serving as a Faculty and clinical instructor. I was soon appointed as a clinical coordinator focusing on informatics and research. My successful outputs and programs were institutionalized university-wide and was appointed as an Assistant Director of the University Research Development and Innovation Center. Two years thereafter, I was given the Director position until the present. Being exposed to other disciplines made me realize the strategic position of Nursing science as core in the healthcare field. I pursued PhD in Development studies due to increasing importance of multidisciplinary and cross-disciplinary research work. Being loyal to my Nursing roots, I focused my doctoral dissertation on Telehealth technologies for the elderly. Through this dissertation project, I have managed a community service program for technology and health literacy in several provinces in the Philippines. This was submitted and has been recognized by the International Council of Nurses through the Connecting Nurses initiative in 2012 and was later on showcased in a professionally made video which was converted in 6 languages and published online. Because of my Telehealth and technology initiatives, I was recognized by Apple Inc. in 2013 as one of the Apple Distinguished Educators and was appointed as member of its global Advisory Board in 2015 for two terms. Working as a Director opened doors to international collaborations. Currently, I have numerous research collaborations in the US, Indonesia, Thailand, Malaysia, Indonesia and Japan. Citing a specific example, I have managed to publish papers on the use of Humanoid Robots for elderly care with scholars in Tokushima University in Japan.

Michael was awarded Nurse in The Limelight Innovator Award. A professional video was made to showcase his community TeleHealth program.
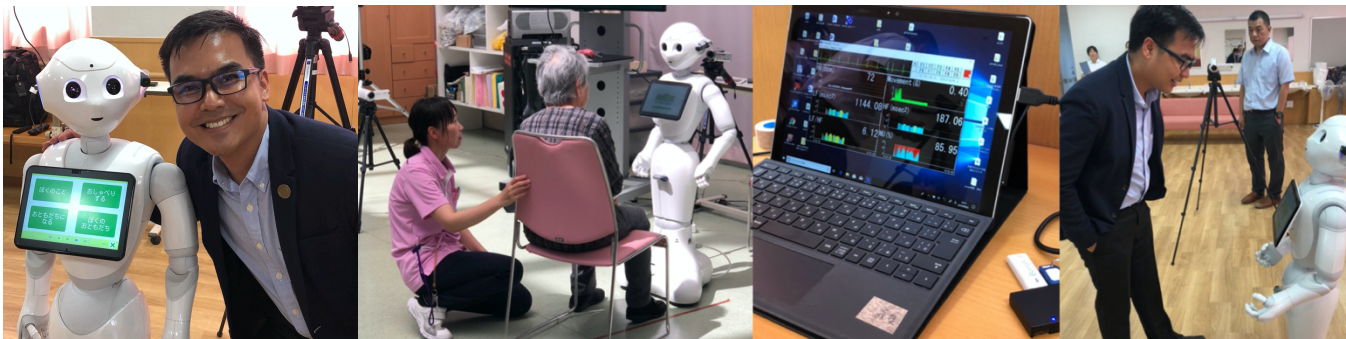
My professional roles and goals as a nurse are local and global. Being situated in a diverse situation within and outside Nursing, I envision myself to work on projects linking Nursing to other disciplines, specifically in the field of information and communications technology. I believe that Nurses are engaged collaborators who can proactively work in various settings to solve local problems using a globally recognized approach - "Think local,

act global". I want to be an instrument of change and a transformative leader. The Philippines is experiencing a breadth of health, economic, environmental, social, political and technological challenges. I was given a chance to work with Nursing elite leaders in a coalition to develop the Philippine Professional Nursing Roadmap which is a national strategic plan for nursing in our country. I want to give my share in developing policies that will impact the Nursing Profession in the years to come - not only in the Philippines but in the global arena as well. As Nursing move towards a borderless society where global citizenship (caring for the world rather than caring only on your own) is becoming more prominent, we might be experiencing similar problems and challenges that require collaborative approach. I want to showcase papers that will address a local or regional (Asia) challenge that can be knowledge-translated to other countries as well. My professional experiences in Nursing, technology and policy development might be useful in establishing a research project related to Nursing in the era of the Fourth Industrial Revolution (FIRe). My current projects under the concept of FIRe in Nursing has led me to receive the Emerging Nurse Researcher Award from Sigma in the recently concluded Nursing Research Congress in Alberta, Canada, and acquire the Experienced Nursing Faculty Leadership Academy (ENFLA) scholarship for Cohort III (2018-2019).

Through the years, Michael is a mentor to everyone.

Michael is working on several projects related to Nursing in the Fourth Industrial Revolution. These include humanoid robots research for healthy seniors (in partnership with Tokushima University), VR and AR.

Since the 2013 Connecting Nurses Award, Michael has hundreds of research and keynote presentations around the world. Michael also serves as an Advisory Board of the Apple Inc. Apple Distinguished Educators Group.

Michael is the 2019 Emerging Nurse Researcher Awardee of the Sigma Theta Tau International Conference in Nursing in Alberta Canada.

Selected publications

Diño, M. J. S., & Ong, I. L. (2019). Research, Technology, Education & Scholarship in the Fourth Industrial Revolution [4IR] : Influences in Nursing and the Health Sciences. The Journal of Medical Investigation: JMI, 66(1.2), 3–7. https://doi.org/10.2152/jmi.66.3

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Diño, M.J.S., M., & Han, J.-S. (2019). Health computing for Intelligence of Things. *Technology and Health Care*, 27(5), 455–457. https://doi.org/10.3233/THC-191746

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Ong, I. L., **Diño, M. J. S**., Calimag, M. M. P., & Hidalgo, F. A. (2019). Development and validation of interprofessional learning assessment tool for health professionals in continuing professional development (CPD). PLOS ONE, 14(1), e0211405. https://doi.org/10.1371/journal.pone.0211405

Orte, C. J. S., & **Diño, M. J.** (2019). Eliciting e-leadership style and trait preference among nurses via conjoint analysis. Enfermería Clínica, 29, 78–80. https://doi.org/10.1016/j.enfcli.2018.11.025

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Diño, M. J. S., & de Guzman, A. B. (2015). Using Partial Least Squares (PLS) in Predicting Behavioral Intention for Telehealth Use among Filipino Elderly. Educational Gerontology, 41(1), 53–68. https://doi.org/10.1080/03601277.2014.917236