



## **Meet the New Stars of PCHRD**

By DOST PCHRD – August 20, 2021

<https://www.pchrd.dost.gov.ph/news/6702-meet-the-new-stars-of-pchrd>

It was a rainy Tuesday morning and the day seemed gloomier with the reimposition of the Enhanced Community Quarantine on the National Capital Region due to increasing Delta variant cases in the country, but Secretary Fortunato de la Peña and Dr. Montoya beamed as they repeatedly introduced Dr. Ruby Anne King and Dr. John Carlo Malabad to everyone during their first official appearance in front of the DOST community.

Philippine Council for Health Research and Development (PCHRD) Executive Director Dr. Jaime Montoya called them the new stars of PCHRD during the Department of Science and Technology's (DOST) Town Hall Meeting on the COVID-19 Delta Variant, and there could not have been a more opportune time to introduce PCHRD's new doctor-scientists.

A few months before joining PCHRD as Assistant Scientists, Dr. King and Dr. Malabad worked on COVID-19, not as attending physicians but as scientists who dealt with the virus itself.

### **THE WINDING ROAD TO BECOMING DOCTOR-SCIENTISTS**

Doc Ruby and Doc JC were part of the first batch of doctor-scientists in the MD-PhD in Molecular Medicine program of the University of the Philippines Manila (UPM), one of the many scholarship programs that DOST – PCHRD supports, but a career in biomedicine was not what they initially had in mind.

“I didn't really plan to specialize in Molecular Medicine,” Doc Ruby said, and truth be told, she did not know the program existed before. At a young age, Doc Ruby already knew she wanted to become a doctor, a dream which her family supported wholeheartedly, and it was on her journey to becoming a medical practitioner that she was introduced to the world of research and eventually, Molecular Medicine. “I appreciated the rigor of conducting research and how it could truly make a difference in the lives of people,” She shared, and she cited her undergraduate professors as her inspiration. However, she thought that there would be very few opportunities to do research in medical school, that is, of course, until she heard of the MD-PhD scholarship program upon her admission to UPM. “I had great difficulty at first, but as I spent more time in the program, I realized more and more the value of molecular medicine in the clinical conditions that we were learning about in medical school and in the hospital.” And it was then that her appreciation for the field of Molecular Medicine grew.

Like Doc Ruby, Doc JC also dreamed of becoming a doctor, but he found his love for research somewhere else. “When I did my undergraduate thesis at IRRI, I enjoyed research and working in the lab so much.” Rarely does research come into mind among the youth when it comes to choosing a career path, but because of his experience at IRRI, Doc JC told himself that if his dream to study at the UPM College of Medicine did not come true, then he would readily pursue a career in research and teaching.

“But God is so good,” he said. “He got me admitted to my dream med school.” And to Doc JC, his PhD and the DOST scholarship were the cherries on top of this blessing.

As they dove deeper into the field of Molecular Medicine, they slowly zeroed in on their research interests. Doc JC is passionate about Tuberculosis (TB) research. Whether it be for treatment or epidemiologic studies on TB, he finds all these aspects worth exploring. Doc Ruby, on the other hand, has her sights set on translational immunology, or the process of converting information from immunological research into practical human solutions. She wanted to explore how the immune system could be optimized or modulated to combat infectious diseases like TB and COVID-19 and discover techniques and methods for modelling and evaluating diseases and disease patterns “in silico, in vitro, and in vivo” (through computational approaches, through the controlled lab experiments, and through the study of the specimen as it is within the living organism).

### **THE APOMEDIATOR**

DOST – PCHRD played a silent hand in guiding the two new Assistant Scientists towards a career in Molecular Medicine. Apart from the stipend and incentives they were given through the scholarship, the program also provided Doc Ruby and Doc JC opportunities for career and character growth. Under the MD – PhD program, they were mentored by brilliant professors who not only gave valuable insights but also allowed them to assist in their projects and were able to participate in scientific conferences which opened doors to forming networks with researchers from institutions in and out of the Philippines.

Beyond the scholarship, Doc Ruby and Doc JC also participated in DOST’s Career Incentive Program (CIP), which they both enjoyed. Doc JC spent a year as a Supervising Science Research Specialist in his alma mater, UPM College of Medicine, a stint that greatly appealed to him as it brought all his interests in medicine, research, and teaching together.

Doc Ruby’s CIP experience at the Biomedical Innovations Research for Translational Health Science (BIRTHS) Laboratory was just as memorable for her. In fact, her interest in translational immunology was birthed in that very laboratory. Under Professor Salvador Eugenio Caoili’s tutelage, she began working on translational research aimed at immunological processes that address human health conditions. COVID-19 hit during her stay at BIRTHS and she was able to experience firsthand how all the techniques they have been optimizing in the laboratory were applied to detecting and producing antibodies against COVID-19. “It was through the funding of DOST – PCHRD that we were able to initiate the implementation of these projects,” she added.

Both Doc Ruby and Doc JC acknowledge that it was DOST that opened their eyes to the possibilities and opportunities that biomedical research provides to scientists, a perspective that they have not been given when they were still undergraduate students.

Molecular Medicine may be an unknown field to the general public, but the two doctor-scientists were able to see, through the program, how important this field of science is to improving the lives of Filipinos, COVID-19 being the obvious real-life implication they both cite, and their specific interests within the field reflect their answers.

“Molecular Medicine helps us understand disease mechanisms better, and our knowledge and understanding of these lead us to develop rapid and accurate diagnostic tests and more effective strategies for disease prevention and control. For example, the development of molecular tests or kits to diagnose dengue, TB, and COVID-19 has helped us in the early detection of these diseases, which in turn, led to timely management of our patients,” Doc JC said. Doc Ruby, on the other hand, easily gave immunization as an example. “One of the most identifiable real-life examples of how Molecular Medicine makes the lives of Filipinos better are the COVID-19 vaccines. The relative speed at which the vaccines were developed and studied was made possible largely due to years of molecular medicine research on SARS CoV. These vaccines confer protection against hospitalization and death from COVID-19 and are safe and effective.” She also mentioned that techniques in Molecular Medicine can be used to identify underlying mechanisms of particular diseases in the Philippines and why our people are predisposed to them. One of these techniques is biomarking, which is also one of Doc JC’s interests albeit with a focus on TB.

These specific interests were further highlighted in the COVID-19-related work they’ve done prior to joining PCHRD. Dr. King worked on cell-based vaccine and cellular therapeutics research while she worked in the Subnational Laboratory for Emerging and Re-emerging Diseases at the Lung Center of the Philippines. Dr. Malabad, meanwhile, worked as a COVID-19 responder and a volunteer laboratorian at the Research Institute for Tropical Medicine COVID-19 testing facility.

## **NEXT STEPS**

Doc JC was honest when he was asked what encouraged him to work with PCHRD. “I really enjoyed my previous work in the academe as a physician-researcher .... The compensation was good, but it was contractual.” He shared, “As my family’s breadwinner, I desire for a more stable job, and the position that I have right now is nothing but perfect for what I was praying for because I can still do research work and it’s a permanent item.” Outside of research, Doc JC is still able to provide services as a volunteer physician and double as a radio anchor at his church, the Cathedral of Praise Manila. He is also a member of DOST and Department of Health-led biosafety committees.

Doc Ruby, on the other hand, cites Dr. Montoya as her influencer. “Dr. Jaime Montoya has always been very supportive of the MD-PhD program and his team have constantly been presenting to us various activities where we could potentially be involved.” She said this was instrumental in her decision to join PCHRD because she saw through his and PCHRD’s efforts that there is still more work to be done. In addition, she saw it as an opportunity not only for personal growth but to serve the country and different communities through scientific research, collaboration, and communication.

As Assistant Scientists, they expect to help in research planning and project management and monitoring. Doc JC also added that they will help in the research information, communication, and dissemination initiatives of the Council; strengthening the research capability of the country’s regional health research and development consortia; and fostering international research collaborations with other institutions abroad. “[But] of course in this time of the pandemic, we are involved in COVID-19 research and review of evidence/literature.” Doc Ruby stated, “There are a multitude of research questions to tackle and misconceptions to correct when it comes to COVID-19 and we hope to help in coming up with answers that are scientifically sound and validated.”

Beyond COVID-19, the doctor-scientists also wish to work on research in their specific fields of interest: Doc Ruby on translational immunology and Doc JC on TB. However, Doc Ruby believes that there is no disease entity or condition that can be dismissed and that bringing lesser known diseases or research topics to light is crucial as there will be communities that will benefit from them. In addition, Doc Ruby also wishes to contribute in capacity building for health scientists in the country and bridging the gap between science research and clinical applications among clinicians. As for Doc JC, he said he looks forward to applying the knowledge he gained from university and his experiences as physician-researcher to help the Council accomplish its mandate and help improve health R&D in the country.

### **THE HARVEST IS PLENTY BUT THE LABORERS ARE FEW**

The Philippine Institute of Development Studies foresees a professional drought in the life science, physical science, maths, statistics, and engineering sectors by 2025, an offshoot of the current interest in Information and Communications Technology (ICT) among the youth and the oversupply of ICT professionals in the country. Which explains Secretary de La Peña's and Dr. Montoya's excitement at the arrival of the two young doctor-scientists.

As Doc Ruby and Doc JC provided the DOST community with information on the Delta variant and the measures to be taken to prevent the spread of the virus, they imbued the Town Hall meeting with much needed youthful energy.

“We need more researchers and scientists in our land.” Doc JC answered when asked what he would say to young Filipinos. “Those who will help our leaders come up with science-based/evidence-based policies that would make the lives of Filipinos better.” Doc Ruby added that there is a wealth of scientific data to be discovered in the country. They both conceded, though, that a career in the sciences is never easy. Research conditions are far from perfect and those pursuing this path would have to constantly remind themselves of their purpose, but they both hold on to hope that the research environment in the Philippines will eventually get better.

Doc JC had this to say to young Filipinos who are interested in taking up a career in the sciences: “We can make a difference with what we have now while we continue to strive and fight for a more conducive and enabling research environment in the country. Join us in this endeavor, and together let's make science and technology work for the Filipino people.”