December 15, 2016

Graduate College Announces Recipients of the November 2016 Gwen Frostic Doctoral Fellowships

The Graduate College is pleased to announce that three WMU doctoral students have been named recipients of Gwen Frostic Doctoral Fellowships for the 2016–17 academic year. The Gwen Frostic Doctoral Fellowships are funded generously from an endowment made possible by the late poet, artist, and naturalist, Gwen Frostic, a WMU alumna, Class of 1929. Awards are given to assist recipients with the completion of the doctoral dissertation in all disciplines.

The 2016–17 Gwen Frostic Doctoral Fellowships recipients are as follows:

Mohammed Aledhari – Department of Computer Science: Mohammed Aledhari will receive the Gwen Frostic Doctoral Fellowship for his dissertation, “Customize Content-Encoding of Network Transfer Protocols to Speedup of IoT Big Data Transfer.” Mohammed’s research in the areas known as the Internet of Things (IoT) will establish the first eyes-like microcontroller-based device for visually impaired people by using sensor, microcontroller, machine learning, and image processing techniques. The research will assess the limitations and challenges of electronics in simulating the lived experiences of visually impaired individuals. It will also address the accuracy of localization algorithms and eventually, the research will be extended to other disciplines. His dissertation advisor, Dr. Fahad Saeed, acknowledges the significance of this proposed research and states that the “development of smart eyes-like sensors and microcontrollers will potentially serve approximately 280 million visually impaired patients and enhance their quality of life, safety, and well-being.” Mohammed has published two conference proceedings paper and one journal paper that surveys various IoT areas. Dr. Saeed describes this research as “innovative” – and writes that “Such advances rest in accord with the evolutionary contexts of electronic health services (EHS) and the Internet of Things (IoT). After graduation with his Ph.D., Mohammed aspires to be an educator and is considering a career as a tenure-track professor,
James L. Dawson – Department of Educational Leadership:  James Dawson will receive the Gwen Frostic Doctoral Fellowship for his dissertation research titled, “Justice Involved Veterans Post-Release Employment Experiences.” James’ research will make a significant contribution to the field by assisting veterans and Veteran Services Agencies in working with incarcerated veterans by transitioning these individuals into career tech educational programs, despite the challenges and barriers they may face as a result of their criminal backgrounds. According to his research, Justice Involved Veterans represent 10% of those individuals incarcerated in state and federal prisons who have a U.S. military service background. Researchers indicate that “These veterans may be at greater risk of incarceration than men in the general population as a result of post traumatic stress disorder (PTSD) but also from difficulties reintegrating into civilian society after extensive periods away from civilian employment and supportive social networks.” Currently, there is only minimal qualitative and quantitative research available on this topic, and the results in evaluating veterans’ employment experiences, post release, will inform the policy makers, vocational educators, the Veterans Administration, as well as criminal justice professionals, among others. According to Dr. Richard Zinser, James’ dissertation advisor, this project “has the potential to make a substantial contribution to the field via peer-reviewed publication, and will likely include a set of recommendations for several Michigan agencies related to veterans, education, and employment.”

Niluka Dissanayake – Department of Chemistry:  Niluka Dissanayake will receive the Gwen Frostic Doctoral Fellowship for her dissertation research titled, “Strategies to Elucidate the Stability and Toxicity of Nanoparticles Exposed to Various Contaminants”. Niluka’s research will focus on understanding the environmental impact of anthropogenic nanoparticles that have increasingly appeared in consumer products and will examine their stability and toxicity in the presence of other contaminants. The study will determine how nanoparticles impact bacteria and also will examine what mutagenic effects arise: some mutated bacteria may be antibiotic resistant. The contaminants are considered “high-risk emerging contaminants” that may impact other organisms in the ecosystem. The toxic effects of these iron oxide nanoparticles (IONPs) are of interest to researchers, especially as their use in medical and industrial applications increases, thereby resulting in significant environmental and health concerns.
According to Dr. Sherine O Bare, Niluka’s dissertation advisor, the goal of the study is to “develop a fundamental understanding of how nanoparticle structure…can influence their behavior when in contact with contaminants common in the environment… Consequently, these emerging contaminants will make their way into the environment, yet their toxicity and environmental impact is not well understood.” Niluka is first author in a prestigious journal, *International Journal of Molecular Science*, 2015, and aspires to be an educator.