The National Institutes of Health has funded a Research Supplementals to Promote Diversity in Health-Related Research grant. The project is entitled “Supplemental to Claudin-2, Claudin-12 and Cadherin-17: Novel Targets of Vitamin D Action.” Dr. Angela R. Porta, Department of Biological Sciences, School of Natural Sciences at Kean University, will be the Principle Investigator. The object of the proposal is to support the full time employment and scientific training of a recent graduate of Kean University as a research assistant and to serve as a bridge from her undergraduate degree to the start of her Ph.D. graduate program.

With support from this supplemental grant, the research assistant will be able to continue to be involved in meritorious research and continue to further expand her research training and enhance her critical thinking and problem solving skills, and better understand how to develop and approach scientific questions. The research training will provide a framework for her future career which will lead to greater contributions to scientific research in graduate school and ultimately lead to a contribution to basic scientific knowledge as a future independent researcher.

The proposed research aims to obtain a better understanding of vitamin D action on intestinal calcium transport by investigating the role of extracellular matrix proteins claudin-2, claudin-12 and cadherin-17 in vitamin D mediated intestinal calcium transport in the duodenum, jejunum, ileum, cecum and colon of mice that are on a high calcium diet versus a low calcium diet. The hypothesis to be tested is that vitamin D mediates intestinal calcium transport not only by the established transcellular pathway but also via the paracellular pathway. Insight into how vitamin D regulates the paracellular process will provide a more complete understanding of vitamin D mechanism of action, and will allow for the future development of drugs that may influence calcium entry by the intestine. This is important for diseases associated with calcium imbalance such as osteoporosis.