

Dr. Melissa Nixon, former WV-INBRE-supported research student, publishes in the New England Journal of Medicine

Former WV-INBRE-supported summer research student, Mellissa Nixon, is currently a post-doctoral research fellow at Vanderbilt University Medical Center. She is working in the laboratory of Dr. Justin Balko. The current focus of the lab is understanding the role of cell signaling pathways in driving cancer progression and immune evasion. Dr. Nixon earned her Bachelor of Science degree from West Virginia Wesleyan College in 2010. There, she conducted research supported by WV-INBRE under the mentorship of Dr. Luke Huggins. Her work culminated in the publication of a paper in the European Journal of Scientific Research where she was first author (“Antibacterial and cytotoxic effects of red mangrove (*Rhizophor mangle*, L. *Rhizophoraceae*) fruit extract”. *European Journal of Scientific Research*;11/5/2011, Vol. 63 Issue 3, p439). Dr. Nixon then attended The Ohio State University to pursue her PhD. She was the first author of 2 basic science



manuscripts investigating the role of therapy resistance in breast cancer, and one clinical manuscript conducting a meta-analysis examining the benefit of dual anti-HER2 therapy vs single agent combined with chemotherapy. After graduating in 2014, Dr. Nixon began her post-doctoral work at Vanderbilt University Medical Center. As a research fellow, she has won the American Association for Cancer Research Scholar-In-Training-Award and has given a poster podium presentation at the San Antonio Breast Cancer Symposium, the largest single organ site meeting in the world. Most recently, Dr. Nixon, through a collaboration with cardio-oncologists, oncologists and bioinformaticians, published an article in the *New England Journal of Medicine*, the high impact scientific journal. This article, entitled “Fulminant Myocarditis with Combination Immune Checkpoint Blockade” (*N Engl J Med.* 2016 Nov 3;375(18):1749-1755), describes two cases of acute and unexpected fatal myocarditis that occurred in melanoma patients following treatment with the combination of ipilimumab and nivolumab. Similar clonal T cell populations were found in myocardium and in the tumor, suggesting these patients were having a rare T-cell-driven drug reaction. Dr. Nixon hopes to continue conducting translational research investigating tumor autonomous mechanisms for immune evasion with the hopes of gaining an independent tenure track faculty research position.