

Sigma Xi NomComm Maldonado 2019

Name: Tammy Maldonado

Present Position: Director of STEM Education and Outreach

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Biographical Information: Dr. Tammy A Maldonado received her PhD in Environmental, Population and Organismic Biology and Neuroscience Certificate from the University of Colorado Boulder. She is currently the Director of STEM Education and Outreach with the Biological Sciences Initiative at the University of Colorado.

General Research Interests: The aging clock and the role of endocrine and neuroendocrine systems in aging, neurodegeneration, neurogenesis and neuroprotection. The role of reproductive and stress hormone axes in aging. Her research included the neurodegeneration in senescent salmon which exhibit brain pathology similar to that seen in patients with Alzheimer's disease and reproductive disruption and intersex in white sucker fish downstream of wastewater treatment plants.

In 2001 she joined the Biological Sciences Initiative where she has received funding from HHMI, multiple NSF Broader Impacts grant components, and University Awards to develop and implement outreach programs that include traveling scientists that present in K12 classrooms, teacher professional development workshops and apprentice based undergraduate research opportunities and skills training programs. Currently, she is collaborating and consulting with University of Colorado, Boulder STEM faculty to develop new Course-Based Undergraduate Research Experience (CURE) courses. Because undergraduate research experience is widely touted as an effective educational tool for enhancing the undergraduate experience with multiple benefits the CURE model hopes to expand the undergraduate research opportunity to more students earlier in their college career as well as increasing persistence in pursuit of an undergraduate degree.

In recent years, Dr. Maldonado, has implemented a new course offers students a unique opportunity to learn interdisciplinary STEM science concepts through an experiential learning and involvement in a variety of CU-Boulder research projects. This course integrates the science content underlying STEM research with modeling of science process and how it is applied to CU-Boulder STEM research projects. The course integrates inquiry based and research-based laboratory activities and models how data is acquired and analyzed in different types of STEM research taking place at CU-Boulder and connects undergraduates with faculty to conduct undergraduate research as early as their sophomore year.