UNIVERSITY OF WISCONSIN WHITEWATER
COLLEGE of LETTERS AND SCIENCES
Biological Sciences

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Education:
B.S. in Biotechnology, University of Wisconsin - River Falls
Ph.D. in Biomolecular Chemistry, University of Wisconsin - Madison

Research Description: My main research interest is identifying the mechanism(s) that lead to gene silencing in degenerating neurons, specifically histone modifications. Although there has been some progress in neuroprotective treatments for several neurodegenerative conditions, it is likely that many of these saved neurons are non-functional due to early apoptotic events, such as gene silencing and somal atrophy. Work in my lab focuses on identifying histone modifications, especially histone deacetylations, that are associated with gene silencing in apoptotic cells, as well as how these modifications occur and are regulated. By determining which changes are occurring in dying cells, it may be possible to prevent or reverse the changes and rescue the neurons from the death process. My research uses mammalian cell culture to examine a general model of neuronal cell death, as well as a mouse model of retinal ganglion cell death, such as that seen in people with glaucoma.

Current Ongoing Research Projects:

- Examine the effects of HDAC3 overexpression in neuronal cell cultures
- Examine the effects of HDAC3-specific inhibition in neuronal cell cultures
- Determine changes in the E2F1/Rb regulatory pathway in dying neurons

Classes Taught: Bio253 - Intro to Cell Biology; Bio311 - Microbiology