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UAF professor uses zombies as a teaching tool

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Michael Harris, associate professor of neuroscience and integrative physiology at the University of Alaska Fairbanks Institute of Arctic Biology, is really into zombies. He's so into the cultural phenomenon, he uses the reanimated dead to help teach his students the particulars of physiology. / Eric Engman/News-Miner

FAIRBANKS — Dr. Michael Harris teaches students about zombies, but it's not what you think.

This isn't a pop culture or movie class. Harris is an associate professor of neuroscience and integrative physiology at the Institute for Arctic Biology and the University of Alaska Fairbanks. He uses zombies as an example in his classes to explain neurobiology and animal physiology.

He started teaching it as a way to keep students engaged, but it's grown to be more than a teaching tool. Harris is one of three scientists on the advisory board for the Zombie Research Society. The group consists of writers, artists filmmakers and artists who all have the goal of adding greater insights to the zombie discussion. This year Harris will travel to Seattle's ZomBcon convention where he will take part in panel discussion on zombie anatomy and physiology.

The basis for Harris' zombie knowledge is based in his neuroscience research. He said a lot of his research focuses on how the brain

controls breathing. That research as been used to study hibernation and Sudden Infant Death Syndrome.

Harris, who admits he is pop culture and cinema fan, said the point of zombies is a reduced metabolism and brain function.

He said that traditionally neuroscience is taught by presenting clinical case studies, but Harris realized UAF isn't a sociomedical school. He needed to figure out how to teach students neuroscience without having them fall asleep.

So for Harris, that meant zombies.

"We all know the symptoms of zombies," he said.

He used the traditional zombies' desire to eat brains as an example. He said that since the brain is made of up fat, students can see the zombies have a "fat metabolism" meaning their bodies need the fat, so they crave to consume it. Its the same as a person with a negative water balance wanting something salty, so they crave chips.

He insists that by removing the supernatural element of zombies, he can accurately lecture about them.

"It's to help people understand," he said. "It's not part of my normal research, it's just how I frame my lessons."



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He said it's not a huge departure to substitute the word hibernation for zombie. Zombies basically have a reduced metabolism, which is why they move slowly and have impaired brain function.

His research looks at the practical applications of hibernation, like how organs could be transported over greater distances or how reducing metabolism can help trauma patients.

That research helps tie into his role with the zombie research society. He said it's ultimately a lot of fun because it gives him a chance to interact with artists and other scientists around the world.

"When they want to know (zombie) stuff, they contact me," he said.

The people who contact him are generally writers who want to make their works more realistic.

"It's a way to talk about real science," he said.

Harris likes movies that have more "real" depictions of zombies. He said that even when the zombies move fast, what he called "rage zombies," it still has a biological basis. He compared their biology to reptilian predators who have a low metabolism and have low energy demands, but can react quickly to get their prey.

He said that when he presents everything in class he avoids the supernatural and said he has never had someone take offense to the material.

"It's virology, it's toxicology," he said. "It's an intellectual exercise."

But he did admit that he would rather be ready for the zombie apocalypse than worrying about how to deal with it after the fact.

"The physics are sound," he said. "But it's all a bit tongue in cheek."

Contact features writer Suzanna Caldwell at 459-7504.

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« [anon6](#) wrote on Monday, Oct 25 at 07:18 PM »

First time I've ever heard that zombies EVER needed to use zombies for teaching tools. heh heh.

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« [Pearl=W](#) wrote on Monday, Oct 25 at 11:57 AM »

Well now, I've never been much of a zombie fan, but this is just neat! Sounds like the Dr has found a great way to discuss and illustrate his specialty. I have always felt that science and imagination need to go hand in hand. A playfull imagination leads to the exploration of new possibilities that would otherwise be unexamined -

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science and research would be a lot less fun without the imagination, and progress much slower, too.

A very interesting field of study, neuroscience, and the specific area of reduced metabolism is making new contributions to the treatment of a number of medical problems [the 1st I heard of was the tx of severe hypothermia, years ago].

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