



Contributed picture

Welsh corgi Elvis, who died last year, is pictured with a calculus textbook. The lessons may be trite for dogs, according to Elvis' owner, a math professor slated to lecture at Lake Michigan College.

Canine calculations

Your dog's inner voice might be a computer

By LOUISE WREGE
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BENTON TOWNSHIP — “Do Dogs Know Calculus?”

In a March 25 lecture, math professor Tim Pennings will discuss how his dog, Elvis, consistently chose the quickest path to retrieve a ball from Lake Michigan no matter where the ball was thrown in the water.

The presentation will be 1-2:30 p.m. in the Brown Lecture Hall at Lake Michigan College in Benton Township. It is free and open to the public. Call 927-8626 for more information.

The quickest path isn't

always the shortest one, said LMC math instructor Peter Brown, because it takes a lot longer to swim in the water than to run on the land.

“Where should the dog jump into the water mathematically to minimize” the amount of time it takes to fetch the ball, said Brown, who helped bring Pennings to LMC. “It’s really an optimization problem.”

And amazingly, he said Elvis, a Welsh corgi who died last year, would always enter the water close to where the calculus answer said he should enter it.

“This brings up interesting ideas about how nature operates.” Brown said.

“The dog doesn’t actually know calculus, but he acts as if he does because he’s optimizing it through instinct.”

He said the problem of where to enter the water also can be solved using algebra, but it takes a lot longer. With algebra, he said students have to use trial and error to find the correct answer.

“It’s pretty basic algebra, it’s just laborious,” he said.

The problem can be solved in one calculation with calculus.

Brown said knowing how to solve this problem has real-world applications, such as the cheapest way to run a power line from wind turbines in the ocean to a

power station. He said the shortest distance isn’t always the most economical solution because it costs a lot more money to bury wire under the ocean than to bury it on land.

“You have the same type of problem there,” he said.

Pennings taught at Hope College in Holland for many years and is now the chairman of the department of mathematics at Davenport University. Besides “Do Dogs Know Calculus?,” his research with Elvis includes “Do Dogs Know Bifurcations?” and “Elvis Lives: Mathematical Surprises Inspired by Elvis the Welsh Corgi.”

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