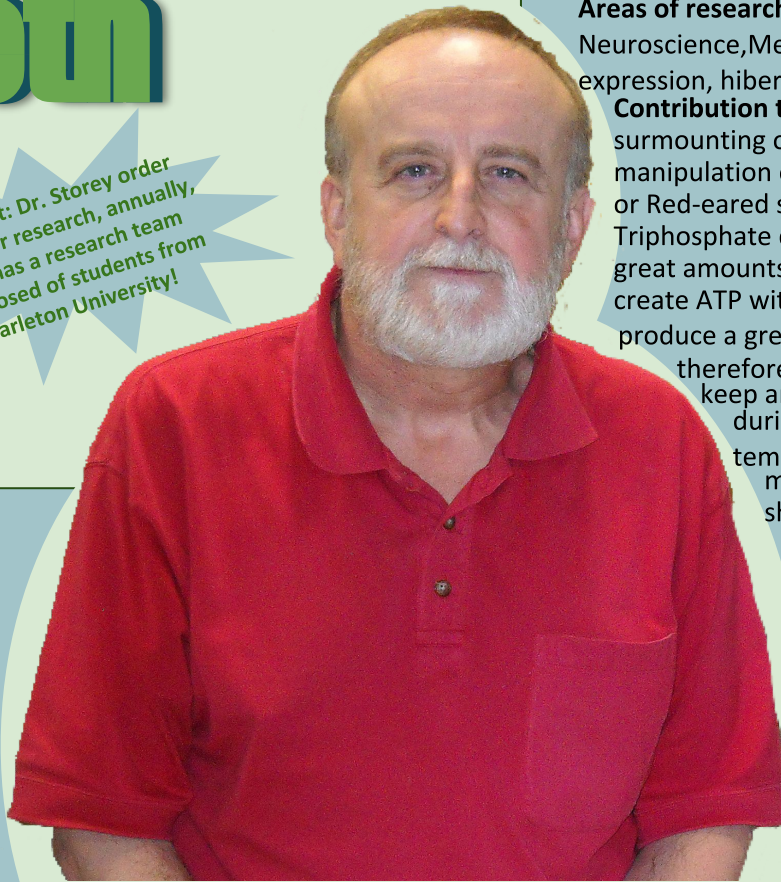


# Dr Kenneth Bruce Storey

Fun fact: Dr. Storey orders frogs for research, annually, and has a research team composed of students from Carleton University!



**Birthplace:** Taber, Alberta, Canada

**Birthday:** October 23, 1949

## Family history:

- Married to Janet Storey
- 2 daughters (Melody & Maggie)

## Education:

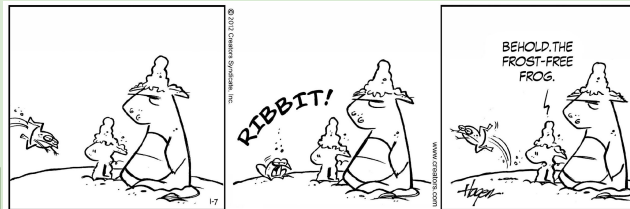
- B.Sc. (First Class Honours) Biochemistry, University of Calgary, 1971
- Ph.D. Zoology, University of British Columbia, 1974

**Living location:** Ottawa, Ontario Canada

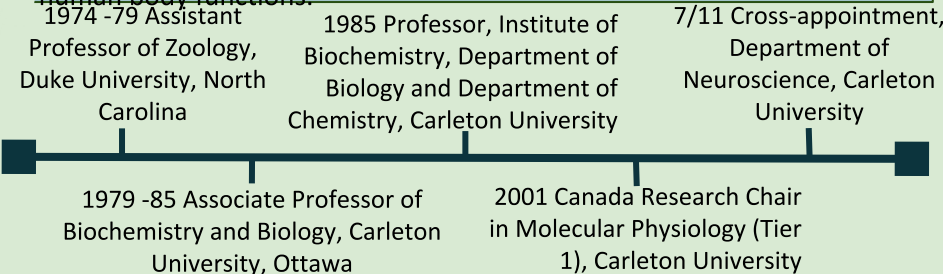
**Awards/accomplishments:** 860 research publications, 30 organized symposiums, Flavelle Medal (2010), Royal Society of Canada, holds the Canada Research Chair in Molecular Physiology, 2016 Carleton University Research Achievement Award (also 2008, 2003, 1998, 1992, and 1989), and was elected as fellow of the Society for Cryobiology.

**Areas of research:** Biochemistry and molecular Biology, Biology, Chemistry, and Neuroscience, Metabolic regulation, epigenetics, biochemical adaptation, epigenetics, gene expression, hibernation, cryobiology, anoxia, freeze tolerance, hibernation, cryobiology.

**Contribution to science:** Storey focuses on biochemical adaptations that aid animals in the surmounting of stressful conditions in the wild. Him and his team work mainly on manipulation of the metabolic process in mammals. Some animals, such as painted turtles or Red-eared sliders possess adaptations that increase the production of Adenosine Triphosphate during catabolism. Storey discovered that tissues inside the animals store great amounts of carbohydrate fuels as glucose and glycogen is catabolized by glycolysis to create ATP without wasting oxygen. During Glycolysis, glucose is fully broken down to produce a greater amount of ATP. Possessing a greater amount of ATP lowers metabolism, therefore the bodies need to catabolize decreases. These adaptations contribute to keep animals alive when anoxia, an absence of Oxygen, occurs. They are also used during cooler temperatures to avoid freezing. In the event of contact with freezing temperatures certain animals, like wood frogs, thin sheets of ice force between muscles and other regions of the body. These ice layers cause the organs to shrink to the point that vital signs are not detected. Storey has identified that High levels of sugars are stored in cells to maintain cell volume, to impede cell from freezing, and support the cell proteins. The proteins aid in homeostasis and prevent crystallization of water molecules that could harm the animal's body. These adaptations, including metabolism decreasing help keep the animal alive despite being frozen. These findings could be applied in the medical field during human organ transplants and have proven that metabolism does not occur at a fixed rate for all animals. This opens up possibilities to find alternate treatments for anoxia in humans. These adaptations could one day be manipulated to function on humans/ improve human body functions.



Best Wishes, Ken! Keep your frogs warm.  
Ralph Hagen 2011



**Career Path**