

## **KENNETH B. STOREY**

[www.carleton.ca/~kbstorey](http://www.carleton.ca/~kbstorey)

**NATIONALITY:** Canadian

**BORN:** October 23, 1949 Taber, Alberta

**MARITAL STATUS:** Married, two daughters

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

### **PROFESSIONAL POSITIONS:**

7/11 Cross-appointment, Department of Neuroscience, Carleton University  
7/01 - **Canada Research Chair** in Molecular Physiology (Tier I), Carleton University, Ottawa  
7/85 - Professor, Institute of Biochemistry, Departments of Biology and Chemistry,  
Carleton University, Ottawa  
7/79 - 6/85 Associate Professor of Biochemistry and Biology, Carleton University, Ottawa  
7/74 - 6/79 Assistant Professor of Zoology, Duke University, Durham, North Carolina

### **PROFESSIONAL HONOURS:**

2013 Adjunct Professor, Dept. Veterinary Integrative Biosciences, Texas A&M University  
College Station, TX  
2012 CryoFellow, Society for Cryobiology, elected  
2011 Fry Medal, Canadian Society of Zoologists  
2010 Flavelle Medal, Royal Society of Canada  
2010 Graduate Student Mentor award, Carleton University  
2008 Carleton University Research Achievement Award (also in 2003, 1998, 1992, 1989)  
2007 Distinguished Alumni Award, University of Calgary  
2005-2007 Professor Extraordinary, Botany & Zoology, Stellenbosch University, S. Africa  
2004- ISI Highly Cited Researcher  
2000 Public Awareness Prize, Canadian Society of Zoologists  
1999 Japan Society for the Promotion of Science Fellowship  
1998 Ottawa Life Sciences Council, Basic Research Award  
1997 Fellow of the American Association for the Advancement of Science, elected  
1993-1995 Killam Senior Research Fellowship  
1990 Fellow of the Royal Society of Canada, elected  
1989 Ayerst Award, Canadian Biochemical Society  
1984-1986 E.W.R. Steacie Memorial Fellowship, NSERC Canada  
1971-1974 NRC Science Centennial Postgraduate Scholarship

### **PROFESSIONAL ACTIVITIES:**

**Total research publications: 735**  
**Plenary & keynote lectures (since 1985): 62**  
Symposia organized: **29**  
Conference scientific committees **3**  
Invited lectures at scientific meetings: **103**  
Invited seminars (university, research stations, public lectures): **381**  
Contributed communications with students at scientific meetings: **497**

**Royal Society of Canada**, McLaughlin Medal Nominations to Position Committee, 2005-2011; chair in 2011  
**Alberta Ingenuity Fund** grant selection committee, 2001-2003, 2005  
**N.S.E.R.C.**, College of Reviewers, Canada Research Chair program, 2000-2002  
**N.I.H.**, National Heart, Lung and Blood Institute review panel, June 2002

**N.S.E.R.C.** Member, Biological Systems and Functions Evaluation Group (EG 1502), 2015-2018  
Grant Selection Committee 31 (Animal Physiology): Chairman of GSC 31, 1998  
Member of GSC 31, 1996-8; Member of membership committee, 1997  
Member of major equipment (SCILS & SCORG) committee, 1997

Scientific advisor: a) Bio S&T Inc., Lachine, PQ, a biotechnology company, since 1997  
b) Perkin Elmer Corp., Spectroscopy Demo site (1995-2000)

Editor, Cell and Molecular Responses to Stress, Elsevier Press, 2000-2002

Member of the Series Advisory Board, Ecological and Environmental Physiology (ed. W. Burggren) Oxford University Press, 2003-

Member of Journal Editorial Boards:

Genomics Proteomics and Bioinformatics (since 2014)

PeerJ (since 2012)

Research and Reports in Biology (since 2010)

Journal of Comparative Physiology B (since 1994)

*Past member:* Cryo-Letters (1983-2000), J. Thermal Biology, American Journal of Physiology, Molecular Physiology, J. Experimental Zoology, Copeia, Environmental Reviews, Biochemistry & Cell Biology, Experimental Biology Online

#### **PROFESSIONAL SOCIETIES:**

Royal Society of Canada

Society for Cryobiology

Canadian Society of Zoologists

Canadian Society of Biochemistry and Molecular & Cellular Biology

American Society of Ichthyologists and Herpetologists

American Association for the Advancement of Science (past)

American Society for Biochemistry and Molecular Biology (past)

Royal Canadian Institute (past)

The Explorers Club of New York (past)

#### **RESEARCH PERSONNEL DIRECTED (since 1980):**

	<u>Past</u>	<u>Current Year (2015-16)</u>
Postdoctoral fellows	12	-
Ph.D. Students	35	4
M. Sc. Students	57	11
B.Sc. Honours Students	92	3
NSERC USRA (2014)	51	9
Other student researchers	19	2
Technicians	11	-

## **CURRENT RESEARCH FUNDING**

**N.S.E.R.C. Discovery grant:** Mechanisms of metabolic rate depression: following nature's lead. 4/14 - 3/19.  
\$725,000

**N.S.E.R.C. Canada Research Chair in Molecular Physiology:**

\$200,000 per year: salary, benefits, administration, research  
2015 – 2022

2008 – 2015 Component for research support \$13,900 yr 8; \$10,750 yr 9&10; \$4,200 year 11; \$5,500  
year 12; \$2,300 year 13; \$0 year 14.

2001 – 2008 Component for research support \$50,000 yr 1 & 2; \$45,000 yr 3; \$40,000 yr 4;  
\$25,000 yr 5; \$20,000 yr 6 & 7.

**Heart and Stroke Foundation of Canada:** Suspended animation: hypometabolic hearts in a primate hibernator.  
Grant #G-14-0005874; 7/14 – 6/17, \$201,775

**Development grant, Carleton University:** Molecular mechanisms of nanotoxicity in isolated protein systems.

7/16 – 6/16, \$9500.

## **PAST FUNDING**

**N.S.E.R.C. Research (Discovery) grants:**

2009-14 Molecular mechanisms of metabolic rate depression. \$725,000  
2004-09 Molecular mechanisms of metabolic rate depression. \$727,600  
1999-04 Metabolic arrest and stress tolerance in animals: molecular mechanisms of  
anaerobiosis, hibernation and estivation. (OGP 6793) \$693,000  
1994-99 Molecular mechanisms of metabolic arrest in animals: anaerobiosis and estivation. \$505,000  
1991-94 Molecular mechanisms of metabolic arrest: anaerobiosis, hibernation, and estivation.  
\$291,000.  
1988-91 Molecular mechanisms of metabolic arrest and freeze tolerance. \$246,800.  
1985-88 Metabolic regulation and biochemical adaptation of intermediary metabolism. \$176,000.  
1982-85 Studies of intermediary metabolism and its control in invertebrates. \$134,200.  
1979-82 Studies of intermediary metabolism and its control in invertebrates. \$79,300.

**N.S.E.R.C. Research Tools and Instruments (Equipment) grants:**

2013-14 Multiplex-ing our way to the future: advanced technology for metabolic analysis. (Storey KB,  
Hayley S, Golshani A) \$61,362.  
2012-13 Life in the slow lane: 2-D electrophoresis for analysis of protein adaptations supporting  
hypometabolism. \$24,890  
2011-12 Stress-responsive gene expression and protein adaptation: analysis with CFX96 real-time PCR  
detection system. \$49,716  
2009-10 Stress tolerance: gel documentation for analysis of gene/protein/enzyme expression and  
adaptation. \$41,880  
2008-09 Instrumentation for studies of animal freeze tolerance: cool, cold and ultra-low!  
\$18,739  
2008-09 Laser capture micro-dissection facility. (Perry SF, Gilmour K, Ekker M, Trudeau V,  
Walsh P, Jonz M, Moon TW, Storey KB) \$142,755.  
2007-08 Biochemical adaptation: superspeed centrifuge for studies in enzymology and  
metabolic regulation. \$36,806.  
2005-06 Proteomic equipment for profiling nuclear and organellar proteins. (Willmore WG,  
Storey, KB, Smith, ML, Aitken, SM, Golshani, A Miller, JD) \$30,000  
1999-00 Gene expression and biochemical adaptation: cell culturing equipment. \$9818  
1999-00 <sup>32</sup>Phosphor imager for molecular biology and biochemistry (J. Cheetham, K.  
Storey, C. Wyndham, N. Chaly, I. Lambert, M. Smith, P. Vierula). \$40,650  
1999-00 Micro ultracentrifuge for molecular biology/biochemistry (I. Lambert, K. Storey,

C. Wyndham, D. Miller, J. Cheetham, P. Vierula). \$75,406  
 1997-98 Gene expression and biochemical adaptation: analytical equipment. \$24,075  
 1996-97 Protein purification by high resolution liquid chromatography. \$30,996  
 1991-92 LS50 luminescence spectrofluorometer. \$47,383.  
 1990-91 UV/VIS spectrophotometers. \$62,598.  
 1989-90 Liquid scintillation counter. \$35,899.  
 1988-89 Spectrofluorometer and ultralow deep freezer. \$24,100.  
 1985-86 High Performance Liquid Chromatography. \$25,000.  
 1979-80 Recording spectrophotometer. \$14,300.

**Canadian Foundation for Innovation:** Environmental stress adaptation: equipment for genomics, proteomics and enzymology research. 03/02-02/03 \$246,540

**Ontario Innovation Trust:** Environmental stress adaptation: equipment for genomics, proteomics and enzymology research. 03/02-02/03 \$246,540

**N.S.E.R.C. support grant** for the Algonquin Park Wildlife Research Station (R. Brooks, S. Desser, K. Storey, J. Sutcliffe, T. Nudds, E. Nol., J. Fryxell, F. Hunter) 4/99-3/02 \$23,800/yr

**C.I.H.R.:** Hyperglycemia resistance: a unique vertebrate model. 02/03 -02/04 \$10,000

Oxidative Stress Consortium. Project leader: A.K. Grover. Coordinating group members: K. Storey, R. Austin, J. Wilson, P. Singal, P. O'Brien. 1999-2000 \$40,000

**Heart and Stroke Foundation of Ontario:** Hypothermic and freezing preservation of heart: vertebrate models. (NA-3742) 7/1998 - 6/2000 \$62,750

**Canadian Diabetes Association:** Mechanisms of extreme hyperglycemia tolerance in a unique vertebrate. 7/97 – 6/98 \$38,455

**National Institutes of Health, U.S.A.** (GM 43796): Organ cryopreservation: model studies on a freeze tolerant frog. 5/90-4/93 \$357,940; 5/93-4/96 \$380,242

**N.S.E.R.C. International Scientific Exchange Award:**

- 1) Dr. E. Skorkowski, Gdansk Marine Laboratory, Poland. 3/86 - 3/87 \$9000, and 1/89 - 1/90 \$6000.
- 2) Dr. V.I. Lushchak, Sevastapol, Ukraine, 7/93 - 1/94 \$12,600

**Carleton University grants and awards:**

Graduate Research grant: 08/04 – 08/05, \$50,000

Research Achievement Award:

5/08-4/09	\$15,000		
5/03 - 4/04	\$15,000	5/92 - 4/93	\$10,000
5/98 - 4/99	\$10,000	5/89 - 4/90	\$10,000

Infrastructure grant, Faculty of Science: Immobilized enzyme technology. 5/88-4/90 \$50,000.

Graduate Studies and Research grants:

5/99 - 4/00 Stress-activated genes in pancreas identified using cDNA array technology. \$3200  
 3/85 - 3/86 Regulation of metabolic depression in hibernating mammals. \$3,000.  
 5/81 - 5/82 Biochemical strategies of cold tolerance in insects. \$2,400;  
 3/83 - 5/84 Biochemistry of insect cold hardiness. \$3,000.  
 5/79 - 5/80 Refrigerated superspeed centrifuge. \$5,000.

**Canadian Liver Foundation:** A model for cryopreservation: studies of liver biochemistry in a freeze tolerant terrestrial frog. 4/84 - 3/86 \$24,000.

**Atkinson Charitable Foundation:** A model for cryopreservation: freezing tolerance in terrestrial frogs. 6/82 - 6/84 \$25,600

### **National Science Foundation (USA) grants:**

Metabolic Biology section: The role of octopine and octopine dehydrogenase in cephalopod muscle metabolism. 6/78 - 5/79 \$38,500.

Regulatory Biology section: Strategies of freezing tolerance and overwintering in insects. 9/78 - 9/80 \$50,000. Held jointly with Dr. J.G. Baust, University of Houston.

### **RESEARCH ACTIVITIES:**

- 3/14 Visiting researcher, King Abdullah University of Science & Technology, Saudi Arabia
- 2/12 Visiting lecturer & researcher, St. George's University, Grenada
- 6/11 Research scientist, R/V New Horizon expedition, Sea of Cortez, Mexico
- 2/11 Visiting lecturer & researcher, St. George's University, Grenada
- 7/10 Visiting researcher, Sport and Exercise Science, U. Coventry, UK
- 2/08-3/08 Visiting researcher, Sable Systems International, Las Vegas, Nevada
- 1/07-2/07 Visiting researcher, Dept. Botany and Zoology, Stellenbosch University, S. Africa
- 7/05 Visiting researcher, Physiologisches Institut, Universitat Zuerich-Irchel, Switzerland
- 8/04 Visiting researcher, Dept. Botany and Zoology, Stellenbosch University, S. Africa
- 10/99 Visiting fellow, Kyoto Institute of Technology, Japan
- 11/98 Visiting researcher, Hofstra University, Hempstead, New York
- 6/98 Visiting researcher, Harvard Medical School (lab of F. Bunn) and Massachusetts General Hospital (lab of D. Brown), Boston, Mass.
- 6/97 Visiting researcher, Department of Mechanical Engineering and Lawrence Berkeley Laboratories, University of California, Berkeley, CA.
- 11/94 - 12/94 Visiting scientist, McMurdo Station, Antarctica
- 2/93 Visiting researcher, Harvard University Medical School, Boston, MA
- 2/92 - 3/92 Visiting researcher, Department of Mechanical Engineering and Lawrence Berkeley Laboratories, University of California, Berkeley, CA.
- 9/91 - 10/91 Visiting researcher, Dept. Biochemistry, University of Victoria, Victoria, BC.
- 8/90 - 9/90 Visiting researcher, University of Massachusetts, Worcester, MA.
- 2/89 - 3/89 Visiting researcher, Department of Mechanical Engineering and Lawrence Berkeley Laboratories, University of California, Berkeley, CA
- 8/88 -9/88 Visiting researcher, Marine Research Inst., Univ. Bologna, Cesenatico, Italy.
- 4/84 - 5/84 Sabbatical leave, International Institute of Cellular and Molecular Pathology, University of Louvain, Brussels, Belgium.
- 2/84 - 4/84 Sabbatical leave, Institute of Enzymology, Univ. Autonoma, Madrid, Spain.
- 8/83 Visiting scientist, Basic Biochemistry Div., Veterans Admin. Hospital, Dallas
- 1/82 Visiting scientist, NMR Facility of the Dept. Cardiology, Johns Hopkins, University, Baltimore, MD.
- 7/81 - 8/81 Visiting scientist, National Institute on Aging, Baltimore, MD.
- 4/81 - 6/81 Visiting researcher, Marine Biological Association of the U.K., Plymouth, U.K.  
Also 4/80 - 5/80, 8/78 - 9/78, 4/77 - 5-77.
- 9/76 - 10/76 Research scientist, R/V Alpha Helix, Amazon Expedition, Brazil.
- 7/76 - 8/76 Visiting researcher and lecturer, Marine Biological Lab., Woods Hole, Mass.  
Also 6/75 - 8/75.
- 5/75 Visiting researcher, Pacific Biomedical Research Center, Univ. Hawaii, Honolulu
- 8/73 - 12/73 Research scientist, R/V Alpha Helix, Kona Expedition, Hawaii.

## CARLETON UNIVERSITY TEACHING DUTIES

### Current:

Biochemistry / Biology 2200: Cell Biochemistry & Physiology

Biochem 4908: Honours Research Thesis

Biochem 4907: Honours Essay

Biochem 4901: Selected topics in Biochem

Biology 4901: Directed special studies

Biochemistry 3400: Independent Research II

Biochemistry 2400: Independent Research I

Bio 8361/Biol 6304 Advanced Animal Physiology (2014)

### Courses taught in previous years:

Biology 6304: Topics in Comparative Physiology (joint w U Ottawa)

Biochem 4005: Biochemical Regulation

Biol/Biochem 2200: Cell Biochemistry & Physiology

Biology 5501J: Biochemical Regulation

Biology 5003: Comparative Biochemistry

Biology/Biochem 220: Cell Physiol & Biochem

Biochemistry 310: General Biochemistry

Biology 503: Biochemical Adaptation

Biochemistry 402: Macromolecules

Biochemistry 405: Signal Transduction

Biochemistry: Biochemical Techniques

Biochemistry 403: Metabolic Regulation

Biology 230: Introductory Biology (team)

Biology: Marine Invertebrate Zoology

Chemistry 503: Adv. metabolic regulation

Chemistry 65.579, Chem Toxicol (team)

Chemistry 590: Directed studies

Biol 6304 Adv topics animal physiology

Biol 8361: Recent Adv. Animal Physiol.

Zoology 151: Principles of Physiology

Zoology 420: Environmental Physiology

## UNIVERSITY ADMINISTRATIVE DUTIES

### Present Committees:

Curriculum committee, Biochemistry

Radiation Management committee, University

Search committee, animal physiology/biochemistry faculty position, Biology, 2015

Search committee, protein chemist faculty position, Biochemistry, 2015

Search Committee, new Department Chair, Biology, 2015

### Recent Committees:

Search committee, new Departmental Chair, Biology, 2014

Search committee, faculty position in Health Science, Biology, 2012

Graduate admissions & scholarship committee, Biology, 2009, 2010, 2011, 2012

Graduate student mentoring awards committee, University 2011

Scholarships committee, Biochemistry, 2009

Benchmarking exercise, Integrated Science, 2009

Promotions and Tenure committee, Chemistry 2007-08

Scholarships committee, Biochemistry 2007-08

Institute committee, Biochemistry 2007-08

Search committee for new Chair, Biology 2006

## KENNETH B. STOREY PUBLICATION LIST 2000 - PRESENT

### SUMMARY:

<b>Career total research publications:</b>	<b>730</b>
<b>including:</b>	
<b>Invited articles in conference proceedings:</b>	<b>48</b>
<b>Invited review articles:</b>	<b>38</b>
<b>Book chapters:</b>	<b>40</b>
<b>Magazine &amp; encyclopedia articles:</b>	<b>13</b>
<b>Books edited</b>	<b>7</b>

### 2015

#### Reviews and Chapters

730. Storey, K.B. 2015. Regulation of hypometabolism: insights into epigenetic controls. *J. Exp. Biol.* 218, 150-159. [PMID 25568462](#)
729. Storey, K.B. 2015. The gray mouse lemur: a model for studies of primate metabolic rate depression. *Genom. Proteom. Bioinform.* 13, 77–80. [PMID 26102318](#)
728. Storey, K.B. and Storey, J.M. 2015. Insects in winter: metabolism and regulation of cold hardiness. *In: Insect Molecular Biology and Ecology* (Hoffmann, K.H., ed.), CRC Press, pp. 245-270.
727. Storey, K.B. and Storey, J.M. 2015. Molecular mechanisms of hibernation in reptiles and amphibians. *In: Hibernation and Daily Torpor in Vertebrates* (Frank, C., ed.), Johns Hopkins Press, in press
726. Krivoruchko, A. and Storey, K.B. 2015. Turtle anoxia tolerance: biochemistry and gene regulation. *Biochim. Biophys. Acta* 1850(6), 1188-1196. [PMID 25662819](#)
725. Biggar, K.K. and Storey, K.B. 2015. Insight into post-transcriptional gene regulation: Stress-responsive microRNAs and their role in the environmental stress survival of tolerant animals. *J. Exp. Biol.* 218, 1281-1289. [PMID: 25954040](#)

#### Journal Articles

724. Biggar, K.K. and Storey, K.B. 2015. Low-temperature microRNA expression in the painted turtle, *Chrysemys picta* during freezing stress. *FEBS Lett.* 589, 3665-3670. DOI 10.1016/j.febslet.2015.10.026
723. Biggar, K.K., Biggar, Y. and Storey, K.B. 2015. Identification of a novel dehydration responsive gene, *drp10*, from the African clawed frog, *Xenopus laevis*. *J. Exp. Zool. A* 323, 375-381. [PMID 25866033](#)
722. Biggar, K.K., Wu, C.-W., Tessier, S.N., Zhang, J., Pifferi, F., Perret, M. and Storey, K.B. 2015. Primate torpor: Regulation of stress-activated protein kinases during daily torpor in the gray mouse lemur, *Microcebus murinus*. *Genom. Proteom. Bioinform.* 13, 81–90. [PMID 26093282](#)
721. Biggar, K.K., Wu, C.-W., Tessier, S.N., Zhang, J., Pifferi, F., Perret, M. and Storey, K.B. 2015. Modulation of gene expression in key survival pathways during torpor in the gray mouse lemur, *Microcebus murinus*. *Genom. Proteom. Bioinform.* 13, 111–118. [PMID 26093281](#)
720. Zhang, J., Tessier, S.N., Biggar, K.K., Wu, C.-W., Pifferi, F., Perret, M. and Storey, K.B. 2015. Regulation of torpor in the gray mouse lemur: transcriptional and translational controls and role of AMPK signaling. *Genom. Proteom. Bioinform.* 13, 103–110. [PMID 26092186](#)
719. Tessier, S.N., Zhang, J., Biggar, K.K., Wu, C.-W., Pifferi, F., Perret, M. and Storey, K.B. 2015. Regulation of the PI3K/AKT pathway and fuel utilization during primate torpor in the gray mouse lemur, *Microcebus murinus*. *Genom. Proteom. Bioinform.* 13, 91–102. [PMID 26092184](#)
718. Tessier, S.N., Katzenback, B.A., Pifferi, F., Perret, M. and Storey, K.B. 2015. Cytokine and antioxidant regulation in the intestine of the gray mouse lemur (*Microcebus murinus*) during torpor. *Genom. Proteom. Bioinform.* 13, 127–135. [PMID 26092185](#)
717. Wu, C.-W., Biggar, K.K., Tessier, S.N., Zhang, J., Pifferi, F., Perret, M. and Storey, K.B. 2015. Induction of antioxidant and heat shock protein responses during torpor in the mouse lemur, *Microcebus murinus*. *Genom. Proteom. Bioinform.* 13, 119–126. [PMID 26092183](#)
716. Wu C-W, Bell, R.A.V. and Storey, K.B. 2015. Post-translational regulation of PTEN catalytic function and protein stability in the hibernating 13-lined ground squirrel. *Biochim. Biophys. Acta, Gen. Subj.* 1850, 2196–2202. [PMID 26189697](#)
715. Dawson, N.J., Katzenback, B.A. and Storey, K.B. 2015. Free-radical first responders: The characterization of CuZnSOD and MnSOD regulation during freezing of the freeze-tolerant North American wood frog, *Rana sylvatica*. *Biochem. Biophys. Acta* 1850(1), 97-106. [PMID 25316288](#)
714. Sullivan, K.J., Biggar, K.K. and Storey, K.B. 2015. Transcript expression of the freeze responsive gene *fr10* in *Rana sylvatica* during freezing, anoxia, dehydration and development. *Mol. Cell. Biochem.* 399, 17–25. [PMID 25280399](#)
713. Sullivan, K.J., Biggar, K.K. and Storey, K.B. 2015. Expression and characterization of the novel gene *fr47* during freezing

- in the wood frog, *Rana sylvatica*. Biochem. Res. Intl. 2015, Article ID 363912, 8 pp. [PMID: 26101667](#) PMID: 26101667
712. Luu, B.E. and Storey, K.B. 2015. Dehydration triggers differential microRNA expression in *Xenopus laevis* brain. Gene 573, 64–69. [PMID: 26169019](#)
711. Luu, B.E., Tessier, S.N., Duford, D.L. and Storey, K.B. 2015. The regulation of troponins I, C and ANP by GATA4 and Nkx2-5 in heart of hibernating thirteen-lined ground squirrels, *Ictidomys tridecemlineatus*. PLoS ONE 10(2):e0117747,. [PMID 25679215](#)
710. Rouble, A.N. and Storey, K.B. 2015. Characterization of the SIRT family of NAD<sup>+</sup>-dependent protein deacetylases in the context of a mammalian model of hibernation, the thirteen-lined ground squirrel. Cryobiology 71, 334–343. [PMID: 26277038](#)
709. Peace, R., Biggar, K.K., Storey, K.B. and Green, J.R. 2015. A framework for improving microRNA prediction in non-human genomes. Nucl. Acids Res. Epub July 10, 2015. [PMID: 26163062](#)
708. Brooks, N.E., Myburgh, K.H. and Storey, K.B. 2015. Muscle satellite cells increase during hibernation in ground squirrels. Comp. Biochem. Physiol. B 891, 55-61. [PMID: 26219581](#)
707. Lyons, P.J., Storey, K.B. and Morin, P. 2015. Expression of miRNAs in response to freezing and anoxia stresses in the freeze tolerant fly *Eurosta solidaginis*. Cryobiology 71, 97-102. [PMID: 25998089](#)
706. Lyons, P.J., Crapoulet, N., Storey, K.B., Morin, P. 2015. Identification and profiling of miRNAs in the freeze-avoiding gall moth *Epiblema scudderiana* via next-generation sequencing. Mol. Cell. Biochem. 410, 155-163. [PMID: 26328872](#)
705. Perkhulyn, N.V., Rovenko, B.M., Zvarych, T.V., Lushchak, O.V., Storey, J.M., Storey, K.B., Lushchak, V.I. 2015. Sodium chromate demonstrates some insulin-mimetic properties in the fruit fly *Drosophila melanogaster*. Comp. Biochem. Physiol. C 167, 74-80. [PMID 25220772](#)
704. Mosiichuk, N.M., Husak, V.V., Maksymiv, I.V., Hlodan, O.Y., Storey, J.M., Storey, K.B. and Lushchak, V.I. 2015. Toxicity of environmental Gesagard to goldfish may be connected with induction of low intensity oxidative stress in concentration- and tissue-related manners. Aquat. Toxicol. 165:249-258. [PMID: 26133465](#)
703. Bayliak, M.M., Shmihel, H.V., Lylyk, M.P., Vytvytska, O.M., Storey, J.M., Storey, K.B., Lushchak, V.I. 2015. Alpha-ketoglutarate attenuates toxic effects of sodium nitroprusside and hydrogen peroxide in *Drosophila melanogaster*. Envir. Toxicol. Pharmacol. 40, 650–659.
702. Maksymiv, I.V., Husak, V.V., Mosiichuk, N.M., Matviishyn, T.M., Sluchyuk, I.Y., Storey, J.M., Storey, K.B. and Lushchak, V.I. 2015. Hepatotoxicity of herbicide Sencor in goldfish may result from induction of mild oxidative stress. Pesticide Biochem. Physiol. 122, 67-75. [PMID: 26071809](#)
701. Lushchak, O.V., Gospodaryov, D.V., Yurkevych, I.S. and Storey, K.B. 2015. Oxidized lipids did not reduce lifespan in the fruit fly, *Drosophila melanogaster*. Arch Insect Biochem Physiol. In press, Epub Oct 8, 2015. PMID: 26446372
700. Alvarado, S., Mak, T., Liu, S., Storey, K.B., and Szyf, M. 2015. Dynamic changes in global and gene specific DNA methylation during hibernation in adult thirteen-lined ground squirrels, *Ictidomys tridecemlineatus*. J. Exp. Biol. 218, 1787-1795. [PMID: 25908059](#)
699. Adamson, K.J., Wang, T., Zhao, M., Bell, F., Kuballa, A.V., Storey, K.B. and Cummins, S.F. 2015. Molecular insights into land snail neuropeptides through transcriptome and comparative gene analysis. BMC Genomics 16, 308. [PMID: 25884396](#)
698. Adamson, K.J., Wang T., Rotgans, B., Kuballa, A.V., Storey, K.B., Cummins, S.F. 2015. Differential peptide expression in the central nervous system of the land snail *Theba pisana*, between active and aestivated. Peptides. Epub Aug 21, 2015. [PMID: 26303007](#)
697. Adamson, K.J., Wang T., Rotgans, B., Kruangkum, T., Kuballa, A.V., Storey, K.B., Cummins, S.F. 2015. Genes and associated neuropeptides involved with aestivation in a land snail. Gen. Comp. Endocrinol. In press. Epub Oct. 20
696. 689. Zhao, Y., Chen, M., Storey, K.B., Sun, L. and Yang, H. 2015. DNA methylation levels analysis in four tissues of sea cucumber *Apostichopus japonicus* based on fluorescence-labeled methylation-sensitive amplified polymorphism (F-MSAP) during aestivation. Comp. Biochem. Physiol. B. 181:26-32. [PMID 25461675](#)
695. Chen, M., Zhu, A. and Storey, K.B. 2015. Comparative phosphoproteomic analysis of intestinal phosphorylated proteins in active versus aestivating sea cucumbers. J. Proteomics in press, accepted Sept 11, 2015
694. Yu, D., Fang, X., Storey, K.B., Zhang, Y. and Zhang, J. 2015. Complete mitochondrial genomes of the yellow-bellied slider turtle *Trachemys scripta scripta* and anoxia tolerant red-eared slider *Trachemys scripta elegans*. Mitochondrial DNA Epub Dec. 26, 2014. [PMID: 255441313](#).
693. Li, B., Yu, D., Cheng, H., Storey, K.B. and Zhang, J. 2015. The complete mitochondrial genomes of *Cynomys leucurus* and *C. ludovicianus* (Rodentia: Sciuridae). Mitochondrial DNA, Epub Feb 19:1-2. [PMID: 25693710](#)
692. Qian, K., Yu, D., Cheng, H., Storey, K.B. and Zhang, J. 2015. The complete mitochondrial genome of *Nyctalus noctula* (Chiroptera: Vespertilionidae). Mitochondrial DNA. Epub May 22:1-2. [PMID: 26000936](#)
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9. Hochachka, P.W., Storey, K.B. and Baldwin, J. 1975. Squid muscle citrate synthase: control of carbon entry into the Krebs cycle. *Comp. Biochem. Physiol.* 52B, 193-199.
8. Hochachka, P.W., Storey, K.B. and Baldwin, J. 1975. Design of acetylcholinesterase for its physical environment. *Comp. Biochem. Physiol.* 52B, 13-18.
7. Hochachka, P.W., Storey, K.B. and Baldwin, J. 1975. Gill citrate synthase from an abyssal fish. *Comp. Biochem. Physiol.* 52B, 43-50.
6. Baldwin, J., Storey, K.B. and Hochachka, P.W. 1975. Lactate dehydrogenase M4 of an abyssal fish: strategies for function at low temperatures and high pressures. *Comp. Biochem. Physiol.* 52B, 19-24.
5. Moon, T.W. and Storey, K.B. 1975. The effects of temperature and hydrostatic pressure on enzymes of an abyssal fish, *Antimora rostrata*: liver NADP-linked isocitrate dehydrogenase. *Comp. Biochem. Physiol.* 52B, 51-57.

#### 1974

4. Storey, K.B. and Hochachka, P.W. 1974. Enzymes of energy metabolism in a vertebrate facultative anaerobe, *Pseudemys scripta*: turtle heart phosphofructokinase. *J. Biol. Chem.* 249, 1417-1422.
3. Storey, K.B. and Hochachka, P.W. 1974. Enzymes of energy metabolism in a vertebrate facultative anaerobe, *Pseudemys scripta*: turtle heart pyruvate kinase. *J. Biol. Chem.* 249, 1423-1427.
2. Storey, K.B. and Hochachka, P.W. 1974. Activation of muscle glycolysis: a role for creatine phosphate in phosphofructokinase regulation. *FEBS Lett.* 46, 337-339.
1. Storey, K.B. and Hochachka, P.W. 1974. Glycolytic enzymes in muscle of the pacific dolphin: role of pyruvate kinase in aerobic-anaerobic transition during diving. *Comp. Biochem. Physiol.* 49B, 119-128.

# **KENNETH B. STOREY**

## **LECTURES AND CONFERENCE PRESENTATIONS**

### **CAREER SUMMARY**

<b>Plenary, Keynote and Named Lectures:</b>	<b>62</b>
<b>Conference Scientific Committees</b>	<b>3</b>
<b>Symposia Organized</b>	<b>29</b>
<b>Invited Lectures in Symposia at Scientific Meetings</b>	<b>103</b>
<b>Invited Seminars (universities, research stations, public lectures)</b>	<b>381</b>
<b>Contributed Communications with Students at Scientific Meetings</b>	<b>487</b>

### **PLENARY LECTURES, KEYNOTE ADDRESSES & NAMED LECTURES 2007 - Present (40 others 2006 and earlier):**

- The edges of life. Ontario Biology Day conference, Carleton University, Ottawa. March 21-22, 2015.
- Lessons in organ preservation from nature. Keynote address, Organ Banking Summit, Palo Alto, CA, February 26-28, 2015.
- The living dead. Plenary lecture, Colloque ExoMod, Centre National de la Recherche Scientifique- Campus Gérard Mégie, Paris, France, February 9-10, 2015.
- Metabolic rate depression: biochemical and molecular mechanisms. Keynote address, Society for Experimental Biology, Manchester, UK. July 1-4, 2014.
- The living dead: metabolic arrest and the control of biological time. Hilgendorf Lecture, Evolution and Ecology Forum, University of Tübingen, Tübingen, Germany, October 24-25, 2013.
- Mammalian hibernation – clinical applications. American College of Cryosurgery (ACCryo 2013), Miami, Florida, USA. January 2-7, 2013.
- Stress response and adaptation: a new molecular toolkit for the 21<sup>st</sup> century. 1<sup>st</sup> International Conference on Oxidative Stress in Aquatic Ecosystems. Los Cabos, Mexico, November 20-24, 2012.
- Metabolic mechanisms of mammalian hibernation. Keynote speaker, 14<sup>th</sup> Chemistry & Biochemistry Graduate Research Conference, Concordia University, November 18, 2011.
- Mammals on ice: Biochemical regulation of winter hibernation. Plenary series. Department of Biomedical and Molecular Sciences, Queen's University, Kingston, September 16, 2011.
- Exploring biochemical adaptations: synthetic intuition on a family farm. Fry lecture, 50<sup>th</sup> annual Canadian Society of Zoologists, University of Ottawa, May 16-20, 2011.
- Frozen alive: Molecular mechanisms of vertebrate freeze tolerance. Keynote lecture, 11<sup>th</sup> Extreme Cryo meeting, Edmonton, Alberta, January 29-30, 2010.
- Life in the cold: a biochemist's perspective on animals in winter. Keynote lecture, 39<sup>th</sup> Annual meeting, German Ecological Society, Bayreuth, Germany, September 14-18, 2009.
- Life in the cold: molecular mechanisms of mammalian hibernation. Keynote lecture, 34<sup>th</sup> annual APICS/CIC Student Chemistry Conference, St. Francis Xavier University, Antigonish, Nova Scotia, May 14 -16, 2009.
- Life in an ice cube. Keynote lecture, Biology Graduate Research Conference, University of North Texas, Denton, TX, April 25, 2009.
- Metabolic arrest: it isn't just for turtles anymore! How the concepts of Peter Lutz have spread across phylogeny. Peter L. Lutz Memorial lecture, Florida Atlantic University, Boca Raton, FL, March 24, 2009.
- Frozen and alive: ectothermic vertebrates in winter. Keynote lecture, Richard E. Peter Biology Conference, University of Alberta, Edmonton, AB, March 5-6, 2009.
- Mammals on ice: the molecular secrets of winter hibernation. 25<sup>th</sup> Annual meeting, Australian and New Zealand Society for Comparative Physiology and Biochemistry, University of Sydney, Sydney, Australia, December 5-8, 2008.
- Life on pause: Nature's ways of suppressing metabolism. European Community project: Sleeping beauties – dormancy and resistance in harsh environments. Max Planck Institute, Berlin, Germany, May 18-21, 2008.
- Life in the cold: a biochemist's perspective on animals in winter. Northeast Natural History Conference, Albany, NY, April 17-18, 2008.
- Mammalian hibernation: how to miss 630 meals in a row. Comparative Biology of Aging, Round Top, Texas, March 6-8, 2008.
- Frozen alive: molecular secrets of freeze tolerant animals. 17<sup>th</sup> MGC symposium, Rotterdam, Netherlands, September 18, 2007.
- Freeze tolerance: its all in the genes. CRYO-2007, 44<sup>th</sup> Annual Meeting of the Society for Cryobiology, Lake Louise, Alberta, July 28-August 1, 2007.

## **CONFERENCE SCIENTIFIC COMMITTEES:**

Sleeping beauties: Dormancy and resistance in harsh environments. Berlin, Germany, May 18-20, 2008.

Biological motility, Moscow, Russia, May 11-15, 2008.

Society for Cryobiology, 44th Annual Meeting, Lake Louise, Alberta, July 28-August 1, 2007.

## **SYMPOSIA ORGANIZED: 2007 - Present (24 others 2006 and earlier)**

Life in the slow lane - depressed metabolism. Society for Experimental Biology, Manchester, UK. July 1-4, 2014. (co-organizer: R. James, Coventry University)

Translational hibernation. American College of Cryosurgery (ACCryo 2014), Key Largo, Florida, January 15-19, 2014.

Cryobiology. 13<sup>th</sup> International Hibernation Symposium, Swakopmund, Namibia, August 6-12, 2008.

Herps in the Great White North: survival strategies for short summers and long winters. American Society of Ichthyologists and Herpetologists, Montreal, PQ, July 23-28, 2008.

Cryobiology: Yin and Yang. CRYO-2007, 44th Annual Meeting of the Society for Cryobiology, Lake Louise, Alberta, July 28-August 1, 2007.

## **INVITED LECTURES IN SYMPOSIA AT SCIENTIFIC MEETINGS: 2007 - Present (79 others 2006 & earlier)**

Frontiers in cold hardiness: an "omics" world. 9th International Congress of Comparative Physiology and Biochemistry, Kraków, Poland August 23-28, 2015.

Decoding the molecular machinery controlling metabolic rate depression. 9th International Congress of Comparative Physiology and Biochemistry, Kraków, Poland August 23-28, 2015.

Controlling biological time: nature has the blueprint. Controlling Biological Time for Organs on Demand - A Vision-setting Workshop. West Point Military Academy, West Point, NY, August 5-6, 2015.

Metabolic arrest and the control of biological time. Controlling Biological Time for Organs on Demand - A Vision-setting Workshop. West Point Military Academy, West Point, NY, August 5-6, 2015.

Nature inspired cryopreservation of human organs. Controlling Biological Time for Organs on Demand - A Vision-setting Workshop. West Point Military Academy, West Point, NY, August 5-6, 2015.

Controlling biological time: Nature has the blueprint. Organ Bioengineering and Banking Roadmap Workshop, Organ Preservation Alliance and White House Office of Science and Technology Policy, Eisenhower Executive Office Building, Washington, DC, May 27-28, 2015.

Protecting cells and proteins in multiple organ systems. Organ Banking Summit, Palo Alto, CA, February 26-28, 2015.

Heat shock proteins in dormancy: life in the cold. 7<sup>th</sup> International Symposium on Heat Shock Proteins in Biology and Medicine, Washington, DC. November 1-5, 2014.

Metabolic rate depression: the heart in winter. 2<sup>nd</sup> Cardiovascular Forum for Promoting Centers of Excellence and Young Investigators. Winnipeg, MB, September 4-6, 2014.

Oxidative stress and the marine environment - "radical" management. 8<sup>th</sup> meeting, Canadian Oxidative Stress Consortium, Carleton University, June 11-13, 2014.

Forever young: what turtles can tell us about aging. American Aging Association, San Antonio, Texas, May 30-June 2, 2014.

Mammalian hibernators - insight into disuse atrophy and insulin signaling. American College of Sports Medicine, Orlando, Florida. May 27-31, 2014.

Suspended animation and space travel. 3<sup>rd</sup> International Space Health Forum on Human Energy Conservation on Earth and in Space. Sponsored by Taksha Institute for Space Health and Aging, Old Dominion University, Hampton, Virginia, April 3-4, 2014.

Epigenetics and the regulation of hypometabolism. Epigenetics in Comparative Physiology, JEB Symposium, Buffalo Mountain Lodge, Banff, Alberta, March 29 - April 2, 2014.

A new molecular toolkit for the 21<sup>st</sup> century: hibernation and beyond. American College of Cryosurgery (ACCryo 2014), Key Largo, Florida, January 15-19, 2014.

Living in the cold: a new molecular toolkit for cryobiology in the 21<sup>st</sup> century. CRYO2013, 50<sup>th</sup> Annual Meeting, Society for Cryobiology, Bethesda, Maryland, July 28-31, 2013.

Metabolic depression: from the intertide to the open ocean. 1<sup>st</sup> International Conference on Oxidative Stress in Aquatic Ecosystems. Los Cabos, Mexico, November 20-24, 2012.



Biochemical adaptation to freezing environments. 26<sup>th</sup> Annual meeting, Federação de Sociedades de Biologia Experimental (FeSBE), Rio de Janeiro, Brazil, August 24-27, 2011.

How nature solves the problem of ischemia and reperfusion. Resuscitation Science Symposium, American Heart Association meeting, Chicago, Illinois, November 13-14, 2010.

Hot and not bothered: Molecular rules for desert life. American Physiological Society Intersociety Meeting, Global Change & Global Science: Comparative Physiology in a Changing World, Westminster, Colorado, August 4-7, 2010.

Animals, molecular adaptations and climate change: how will organisms cope? Memorial symposium for foundation of the Insect Biomedical Research Center, Kyoto Institute of Technology, Kyoto, Japan. March 26, 2010.

Insect cold hardiness – the secret is in the genes. International Symposium on Drosophila Bio-Resources, Kyoto Institute of Technology and Enryakuji Temple, Kyoto, Japan. March 17-18, 2010.

Free radicals in a “radical” stress: lessons from frozen vertebrates! 6<sup>th</sup> Canadian Oxidative Stress Conference, Winnipeg, Manitoba, May 7-10, 2009.

Beyond gene chips: transcription factor profiling in freeze tolerance. 13<sup>th</sup> International Hibernation Symposium, Swakopmund, Namibia, August 6-12, 2008.

Frozen and alive: Canadian herps in winter. American Society for Ichthyology and Herpetology, Montreal, PQ, July 23-28, 2008.

Dormancy to cell preservation: round table discussion. European Community project: Sleeping beauties – dormancy and resistance in harsh environments. Max Planck Institute, Berlin, Germany, May 18-21, 2008.

Dealing with oxygen radicals: lessons from mammalian hibernators. 5<sup>th</sup> meeting, Canadian Oxidative Stress Consortium, Montreal, PQ, May 3-6 2007.

### **INVITED SEMINARS: UNIVERSITIES, RESEARCH STATIONS & PUBLIC LECTURES: 2011 - Present (358 others 2010 & earlier)**

Metabolic stasis: hypometabolism and animal survival in extreme environments. Department of Biological Sciences, SUNY Binghamton, Binghamton, NY, November 13, 2015.

The living dead: metabolic arrest and the control of biological time. Department of Mechanical Engineering and Engineering Sciences, University of North Carolina at Charlotte, Charlotte, NC, October 29, 2015.

The living dead: metabolic arrest and the control of biological time. Department of Biological Sciences, Fordham University, New York, October 14, 2015.

Survival strategies for life in extreme environments: biochemical mechanisms of metabolic rate depression. Department of Biochemistry and Biotechnology, Precarpathian National University, Ivano-Frankivsk, Ukraine, August 18, 2015.

Epigenetics, gene regulation and hypometabolism. Department of Pathology, University of Washington, Seattle, WA. June 3, 2015.

Epigenetics: gene regulation and hypometabolism. College of Science, Engineering and Mathematics, Bethune-Cookman University, Daytona Beach, Florida, February 2, 2015.

The living dead: Metabolic arrest and the control of biological time. College of Science, Engineering and Mathematics, Bethune-Cookman University, Daytona Beach, Florida, February 2, 2015.

Adaptations for life in the intertide: extreme invertebrates. Red Sea Research Center, King Abdullah University of Science and Technology (KAUST), Thuwal, Saudi Arabia, March 23, 2014

The living dead: metabolic arrest and animal survival in extreme environments. Department of Biology, University of Calgary, Calgary, Alberta, February 6, 2014.

The living dead: metabolic arrest and animal survival in extreme environments. Department of Biological Sciences, Florida Atlantic University, Boca Raton, January 23, 2014.

Extreme snails: biochemical adaptations for life in the intertide. Distinguished Speaker Series, Department of Life Sciences Texas A&M University-Corpus Christi, November 8, 2013.

The living dead: metabolic arrest and the control of biological time. Department of Life Sciences Texas A&M University-Corpus Christi, November 7, 2013.

Extreme snails: life at the seashore. EVE seminar & workshop. Institute of Evolution and Ecology, University of Tübingen, Tübingen, Germany, October 28, 2013.

Mammals on ice: lessons for biomedicine. Research Center for Genetic Medicine, Children’s National Medical Center, Washington DC, July 30, 2013.

Life in an ice cube: a frozen Stor-e-y. USDA-ARS National Center for Genetic Resources Preservation, Fort Collins, Colorado, June 10, 2013.

Mammals on ice: Biochemistry of winter hibernation. **Science Café, Ottawa, ON, November 7, 2012.**

Freezing: frogs, organs, human? Almonte Lecture series, Almonte, ON, April 20, 2012.

Frozen alive: winter survival in the Ottawa valley. MacNamara Field Naturalists Club, Arnprior, ON, March 6, 2012.

The emerging field of epigenetic science. Dept. Microbiology, St. George's University, Grenada, February 23, 2012.

Mammals on ice: biochemical regulation of winter hibernation. WIND REF center, St. George's University, Grenada, February 22, 2012.

Life in an ice cube: a frozen Stor-e-y. School of Life Sciences, University of Nevada, Las Vegas NV, January 20, 2012.

Mammals on ice: molecular secrets of winter hibernation. Department of Biology, Carleton University, Ottawa, November 25, 2011.

Molecular secrets of winter hibernation by mammals. Department of Biology, St. Francis Xavier University, Antigonish, October 27, 2011.

Mammals on ice: the molecular regulation of mammalian hibernation Department of Biology, Mt. Allison University, Sackville, NB, October 26, 2011.

Frozen and alive: biochemistry of animal freeze tolerance. Department of Biology, Mt. Allison University, Sackville, NB, October 26, 2011.

Mammals on ice: metabolic regulation of hibernation, Département de chimie et biochimie, Université de Moncton, NB, October 25, 2011.

Molecular secrets of mammalian hibernation. Department of Biology, Dalhousie University, Halifax, NS, October 24, 2011.

Molecular adaptations to climate change: how will animals cope. Ottawa Field Naturalists Club, Ottawa, October 11, 2011.

Mammals on ice: epigenetics in mammalian hibernation. Department of Biology, St. George's University, Grenada, Feb. 10, 2011.

### **CONTRIBUTED COMMUNICATIONS AT SCIENTIFIC MEETINGS BY THE STOREY LAB: 2011 - Present (330 others 2010 & earlier)**

Following are recent poster presentations 2011-2015; most are by trainees from my lab but some (\*) report research with collaborators from other institutions.

#### **18<sup>th</sup> Chemistry & Biochemistry Graduate Research Conference, Concordia Univ., Nov. 20, 2015**

Luu, B.E. and Storey, K.B. Identification and characterization of species-specific novel microRNAs in the hibernating 13-lined ground squirrel, *Ictidomys tridecemlineatus*. (oral)

Childers, C.L. and Storey, K.B. Post-translational regulation of creatine kinase function in the aestivating frog *Xenopus laevis*.

Gerber, A.E.M. and Storey, K.B. Torpor response initiates brain microRNA expression in thirteen-lined ground squirrels, *Ictidomys tridecemlineatus*

Girgrah, R. and Storey, K.B. TGF- $\beta$  superfamily adaptive regulation in the dehydration-tolerant anuran, *Xenopus laevis*.

Hadj-Moussa, H., Moggridge, J.A., Luu, B.E., Quintero-Galvis, J.F., Gaitán-Espitia, J., Nespolo, R.F., and Storey, K.B. Torpor triggers differential microRNA expression in hibernating South American marsupials, *Dromiciops glioides*.

Szereszewski, K. and Storey, K.B. Expression of PPARs in the hibernating ground squirrel.

Watts, A. and Storey, K.B. Regulation of lysine methyltransferases and lysine methylation during torpor cycle in 13-lined ground squirrel, *Ictidomys tridecemlineatus*.

Zhang, Y., Aguilar, O.A and Storey, K.B. Transcriptional activation of muscle atrophy promotes cardiac muscle remodeling during mammalian hibernation.

Logan, S.M. and Storey, K.B. Turn down gene expression for WAT: anti-apoptotic signaling protects white adipose tissue in hibernating 13-lined ground squirrels.

Nguyen, T.D. and Storey, K.B. Differential scanning fluorimetry to detect changes in protein stability under solvent alterations.

Smolinski, M., Mattice, J., Storey, K.B. Purification and characterization of pyruvate kinase in the freeze tolerant wood frog, *Rana sylvatica*.

Wijenayake, S. Tessier, S. N. and Storey, K.B. Metabolic arrest during hibernation! cardiac regulation of pyruvate dehydrogenase (PDH) complex in hibernating ground squirrels (*Ictidomys tridecemlineatus*).

#### **Entomological Society of America annual meeting, Minneapolis, Minnesota, November 15-18, 2015.**

\*Lyons P.J., \*Crapoulet, N., Storey, K.B. and \*Morin, P. CryomiRs: Characterization of a cold-associated family of microRNAs in *E. solidaginis* and *E. scudderiana*.

#### **Canadian Cardiovascular Congress, Toronto, October 24-27, 2015.**

Zhang, Y. and Storey, K.B. Expression of the nuclear factor of activated T cells (NFAT) and downstream targets in ground squirrel cardiac muscle.

#### **9th International Congress of Comparative Physiology and Biochemistry, Kraków, Poland, August 23-28, 2015.**

Logan, S. and Storey, K.B. Turn down gene expression for WAT: Anti-apoptotic signaling protects white adipose tissue in hibernating ground squirrels.

**Learning from Cancer to Advance Neurodegeneration Drug Discovery and Development. The New York Academy of Sciences, June 11, 2015**

\*Nallaseth, F.S., Balch, C., Storey, K. B., Manuel, L., Tracey, M.L., and Lutz, P.L. Comparative evolutionary analysis of the neurophysiological and molecular basis of anoxia resistant turtle and hypoxia sensitive mammalian brains to identify targets for therapeutic intervention in neuropathologies.

**21<sup>st</sup> Canadian Connective Tissue Society conference, Université Laval, Quebec City, May 28-30, 2015.**

Zhang, Y. and Storey, K.B. Expression of the nuclear factor of activated T cells (NFAT) and the downstream targets in ground squirrel skeletal muscle.

**University of Ottawa Heart Institute Research Day, University of Ottawa, May 5, 2015**

Zhang, Y. and Storey, K.B. Expression of the nuclear factor of activated T cells (NFAT) and downstream targets in ground squirrel cardiac muscle.

Wijenayake, S., Tessier, S.N. and Storey, K.B. No need to diet → Just control your metabolism! Regulation of pyruvate dehydrogenase (PDH) in hibernating ground squirrels (*Ictidomys tridecemlineatus*). (Won the Innovation prize)

Luu, B. and Storey, K.B. The regulation of troponins I, C and ANP by GATA4 and Nkx2-5 in heart of hibernating 13-lined ground squirrels *Ictidomys tridecemlineatus*

**12<sup>th</sup> Ottawa-Carleton Institute for Biology research day, Carleton University, April 29-30, 2015.**

Hawkins, L. and Storey, K.B. Changes in histone methyltransferases during natural freezing in the wood frog.

Childers, C. and Storey, K.B. Regulation of skeletal muscle glycolysis during dehydration in the aestivating African clawed frog, *Xenopus laevis*.

Al-Attar, R. and Storey, K.B. Pyruvate dehydrogenase kinase (1-4) regulation under freezing, anoxia and dehydration in liver and muscle of *Rana sylvatica*.

Szereszewski, K. and Storey, K.B. Expression of PPARs in the hibernating ground squirrel *Spermophilus tridecemlineatus*.

Wijenayake, S. and Storey, K.B. No need to diet - Just control your metabolism! Metabolic regulation of pyruvate dehydrogenase (PDH) in hibernating ground squirrels (*Ictidomys tridecemlineatus*).

Ruberto, A. and Storey, K.B. Regulation of muscle lactate dehydrogenase in a hibernating mammal.

Zhang, Y. and Storey, K.B. Expression of nuclear factor of activated T cells (NFAT) and the downstream targets in ground squirrel cardiac muscle.

Hadj-Moussa, H. and Storey, K.B. Regulation of the central metabolic switch, PGC-1 $\alpha$ , and interacting transcription factors in frozen and anoxic *Rana sylvatica*.

Nguyen, T. and Storey, K.B. Differential scanning fluorimetry to detect changes in protein stability under solvent alterations.

Watts, A. and Storey, K.B. Hibernation in the 13-lined ground squirrel, *Ictidomys tridecemlineatus*, involves differences in lysine methyltransferases that are involved in transcriptional control.

Bansal, S. and Storey, K.B. Role of microRNAs in cardiac and skeletal muscles of the freeze-tolerant wood frog, *Rana sylvatica*.

Logan, S. and Storey, K.B. Turn down gene expression for WAT: Anti-apoptotic signaling protects white adipose tissue in hibernating ground squirrels.

**3<sup>rd</sup> Ottawa Heart Research Conference, April 24-25, 2015.**

Zhang, Y. and Storey, K.B. Expression of the nuclear factor of activated T cells (NFAT) and downstream targets in ground squirrel cardiac muscle.

**Society for Developmental Biology, Mid-Atlantic Regional Meeting, Princeton University, March 27-28, 2015.**

\*Nallaseth, F.S., Manuel, L., Balch, C., Storey, K., Tracey, M.L. Jr., and Lutz, P.L. Comparative evolutionary analysis of the neurophysiological and molecular basis of anoxia resistant turtle and hypoxia sensitive mammalian brains to identify oxygen responsive targets in neurodevelopment.

**Ontario Biology Day, Carleton University, March 21-22, 2015.**

Logan, S. and Storey, K.B. Turn down gene expression for WAT: anti-apoptotic signaling protect white adipose tissue in hibernating ground squirrels.

Bansal, S. and Storey, K.B. Role of microRNA in cardiac and skeletal muscles of the freeze-tolerant wood frog, *Rana sylvatica*.

Nguyen, T. and Storey, K.B. Differential scanning fluorimetry to detect changes in protein stability under solvent alterations.

Hadj-Moussa, H. and Storey, K.B. Regulation of PPAR transcription factors in *Rana sylvatica* skeletal muscle and liver during freezing and anoxia.

**Ottawa- Carleton Student Northern Research Symposium, March 06, 2015**

Al-Attar, R. and Storey, K.B. Role of NFATC3 and NFAT5 transcription factors in molecular adaptation to stress in *Rana sylvatica*.

**Organ Banking Summit, Palo Alto, CA, Feb. 26-28, 2015.**

Tessier, S.N. and Storey, K.B. Modulating Nrf2 transcription factor activity by posttranslational modifications and protein-protein interactions: revealing the regulatory mechanisms of antioxidant defenses during hibernation.

Tessier, S.N., Luu, B. and Storey, K.B. Adaptations of cardiac muscle function during mammalian hibernation.

Hefler J., Tessier, S. and Storey, K.B. Role of antiapoptotic signaling in mammalian hibernation.

Rouble, A.N. and Storey, K.B. Wake me up with deacetylation: role of SIRT family members in the liver of hibernating thirteen-lined ground squirrels.

Rouble, A.N., Tessier, S.N. and Storey, K.B. Antiapoptotic signaling as a cytoprotection mechanism during mammalian hibernation.

Biggar, K.K., Dawson, N.J. and Storey, K.B. Real-time protein unfolding: A method for determining the kinetics of native protein denaturation using a quantitative real-time thermocycler.

Kornfeld, S., Biggar, K.K. and Storey, K.B. Suppression of muscle disuse atrophy during mammalian hibernation – microRNA regulation in the skeletal muscle of *Myotis lucifugus*.

Zhang, J. and Storey, K.B. DNA methylation and regulation of DNMTs in the freeze tolerant wood frog, *Rana sylvatica*.

Zhang, J. and Storey, K.B. Tissue-specific pattern of PI3K-Akt signaling during freezing in the wood frog, *Rana sylvatica*.

Wu, C.-W. and Storey, K.B. Roles of the mTOR signaling pathway in hibernating ground squirrels, a differential suppression of active protein synthesis.

**17<sup>th</sup> Chemistry & Biochemistry Graduate Research Conference, Concordia Univ., Nov. 28, 2014.**

Wijenayake, S., Luu, B.E. and Storey, K.B. Heat shock protein response during dehydration in an African clawed frog (*Xenopus laevis*).

Gerber, V. and Storey, K.B. Apoptosis regulation promotes anoxia tolerance in wood frogs.

Szereszewski, K. and Storey, K.B. Translational regulation in anoxia tolerant turtles.

Childers, C. and Storey, K.B. Regulation of skeletal muscle glycolysis during dehydration in the aestivating African clawed frog, *Xenopus laevis*.

Ruberto, A. and Storey, K.B. Regulation of muscle lactate dehydrogenase in a hibernating mammal.

Smolinski, M. and Storey, K.B. Post-translational regulation of glucose-6-phosphate dehydrogenase in the larvae of the freeze-tolerant gall fly, *Eurosta solidaginis*.

**Society for Experimental Biology, Manchester University, Manchester, UK, July 1-4, 2014.**

Zhang, J. and Storey, K.B. DNA methylation and regulation of DNMTs in the freeze tolerant wood frog, *Rana sylvatica*.

Zhang, J. and Storey, K.B. Tissue-specific pattern of PI3K-Akt signaling during freezing in the wood frog, *Rana sylvatica*.

Wijenayake, S. and Storey, K.B. Epigenetic mechanisms of anoxia tolerance: a role for DNA methylation.

Biggar, K.K. and Storey, K.B. Life in the slow lane: microRNA regulation of cyclin D1 during anoxic stress in *Trachemys scripta elegans*.

Tessier, S.N., Luu, B. and Storey, K.B. Adaptations of cardiac muscle function during mammalian hibernation.

Rouble, A.N. and Storey, K.B. Wake me up with deacetylation: role of SIRT family members in the liver of hibernating thirteen-lined ground squirrels.

Wu, C.-W. and Storey, K.B. Roles of the mTOR signaling pathway in hibernating ground squirrels, a differential suppression of active protein synthesis.

**8<sup>th</sup> meeting, Canadian Oxidative Stress Consortium, Carleton Univ., Ottawa, June 11-13, 2014.**

Dawson, N.J., Katzenback, B.A. and Storey, K.B. Free-radical first responders: the characterization of CuZnSOD and MnSOD regulation during freezing of the freeze-tolerant North American wood frog, *Rana sylvatica*.

Lama, J.L., Bell, R.A.V., Storey, K.B. Antioxidant defense in an anoxia-tolerant mollusc: The role of hexokinase and glucose-6-phosphate dehydrogenase regulation in increasing the potential for NADPH production.

**American Aging Association, San Antonio, Texas, May 30-June 2, 2014.**

Wu CW, Storey KB. FoxO3a-mediated activation of stress responsive genes during early torpor in a mammalian hibernator.

Rouble AN, Storey KB. Possible roles for the SIRT family of protein deacetylases in the regulation of mammalian hibernation.

Biggar, K.K. and Storey, K.B. Changes in the Rb-E2F pathway during anoxia stress in a turtle.

Biggar, K.K. and Storey, K.B. Life in the slow lane: microRNA regulation of cyclin D1 during anoxic stress in *Trachemys scripta elegans*.

Krivoruchko, A. and Storey, K.B. Expression of peroxiredoxins in an anoxia-tolerant turtle.

**Canadian Society of Zoologists, Montreal, Quebec, May 25-29, 2014.**

Katzenback BA, Holden HA, Falardeau J, Childers CL, Avis T and Storey KB. *Rana sylvatica* brevinin-1SY: regulation of an antimicrobial peptide in response to environmental stress.

**New York Academy of Sciences, New York, May 9, 2014.**

\*Nallaseth, F.S., Balch, C., Storey K.B., Manuel, L., Tracey, M.L. and Lutz, P.L. Comparative evolutionary analysis of the neurophysiological and molecular basis of anoxia resistant turtle and hypoxia sensitive mammalian brains to identify targets for therapeutic intervention in neuropathologies.

**3<sup>rd</sup> International Space Health Forum on Human Energy Conservation on Earth and in Space. Old Dominion University, Hampton, Virginia, April 3-4, 2014.**

Bell, R.A.V. and Storey, K.B. Posttranslational modification of glyceraldehyde-3-phosphate dehydrogenase from a hibernating mammal: Insight into cold-adaptation and structural diversity of a housekeeping enzyme.  
Hefler J., Tessier, S. and Storey, K.B. Role of antiapoptotic signaling in mammalian hibernation.  
Wu, C.-W. and Storey, K.B. Roles of the mTOR signaling pathway in hibernating ground squirrels, a differential suppression of active protein synthesis.  
Rouble, A.N., Tessier, S.N. and Storey, K.B. Antiapoptotic signaling as a cytoprotection mechanism during mammalian hibernation.  
Kornfeld, S., Biggar, K.K. and Storey, K.B. Suppression of muscle disuse atrophy during mammalian hibernation – microRNA regulation in the skeletal muscle of *Myotis lucifugus*.  
Tessier, S. and Storey, K.B. Muscle disuse atrophy: the expression of myocyte enhancer factor 2 in the skeletal muscle of *Spermophilus tridecemlineatus* during hibernation.  
Tessier, S.N., Luu, B. and Storey, K.B. Adaptations of cardiac muscle function during mammalian hibernation.

**Epigenetics in Comparative Physiology, JEB Symposium, Banff, Alberta, March 29-April 2, 2014.**

Zhang, J. and Storey, K.B. DNA methylation and regulation of DNMTs in freeze tolerant wood frog, *Rana sylvatica*.  
Rouble, A.N. and Storey, K.B. Possible roles for the SIRT family of protein deacetylases in the regulation of mammalian hibernation.

**3<sup>rd</sup> World Molecular & Cell Biology Online Conference, February 25-28, 2014.**

Wu, C.-W. and Storey, K.B. Molecular adaptations of mammalian hibernation; regulation of energy dependent cellular processes during metabolic depression.

**ACCryo2014, Key Largo, Florida, January 15-19, 2014.**

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**Society for Integrative & Comparative Biology, Austin, Texas, January 3-7, 2014.**

\*Alvarado, S., Szyf, M., Rajakumar, R., Storey, K.B., Abouheif, E., Fernald, R. Dynamics of DNA methylation in continuous trait variation, seasonal change and social environment.

**2013**

**CRYO2013, 50<sup>th</sup> Annual Meeting, Society for Cryobiology, Bethesda, Maryland, July 28-31, 2013.**

Biggar, K.K., Dawson, N.J. and Storey, K.B. Real-time protein unfolding: A method for determining the kinetics of native protein denaturation using a quantitative real-time thermocycler.  
Katzenback, B.A., Holden, H.A., Falardeau, J., Childers, C.L., Hadj-Moussa, H., Avis, T.J. and Storey, K.B. Regulation of the antimicrobial peptide brevinin-1SY in the skin of *Rana sylvatica* in response to environmental stress.  
Zhang, J. and Storey, K.B. DNA methylation and regulation of DNMTs in freeze tolerant wood frog, *Rana sylvatica*.  
Bell, R.A.V. and Storey, K.B. Posttranslational modification of glyceraldehyde-3-phosphate dehydrogenase from a hibernating mammal: Insight into cold-adaptation and structural diversity of a housekeeping enzyme.

Tessier, S.N. and Storey, K.B. Modulating Nrf2 transcription factor activity by posttranslational modifications and protein-protein interactions: revealing the regulatory mechanisms of antioxidant defenses during hibernation.

Dawson, N.J. and Storey, K.B. Threonine phosphorylation of catalase from the freeze tolerant frog, *Rana sylvatica*; A preparatory mechanism.

Rouble, A.N. and Storey, K.B. Wake me up with deacetylation: role of SIRT family members in the liver of the hibernating thirteen-lined ground squirrel, *Ictidomys tridecemlineatus*.

Tessier, S.N., Luu, B. and Storey, K.B. Adaptations of cardiac muscle function during mammalian hibernation.

**63<sup>rd</sup> Canadian Society of Microbiologists, Ottawa, Ontario, June 17-20, 2013.**

Katzenback, B.A., Holden, H.A., Falardeau, J., Childers, C.L., Hadj-Moussa, H., Avis, T.J. and Storey, K.B. Regulation of the antimicrobial peptide brevinin-1SY in skin of *Rana sylvatica* under environmental stress.

**ACCryo 2013, Miami, Florida, USA. January 2-7, 2013.**

Tessier, S. and Storey, K.B. Muscle disuse atrophy: the expression of myocyte enhancer factor 2 in the skeletal muscle of *Spermophilus tridecemlineatus* during hibernation.

Wu, C.-W. and Storey, K.B. Roles of the mTOR signaling pathway in hibernating ground squirrels, a differential suppression of active protein synthesis.

Wu, C.-W., Bell, R.A.V. and Storey, K.B. Regulation of PTEN function and structural stability in hibernating thirteen-lined ground squirrels.

Rouble, A.N., Tessier, S.N. and Storey, K.B. Antiapoptotic signaling as a cytoprotection mechanism during mammalian hibernation.

**2012**

**1<sup>st</sup> International Conference on Oxidative Stress in Aquatic Ecosystems. Los Cabos, Mexico, November 20-24, 2012.**

Zhang J. and Storey K.B. p53 transcription factor and cell cycle arrest during anoxia in turtles, *Trachemys scripta elegans*. Bell, R. and Storey, K.B. Regulation of liver glutamate dehydrogenase from an anoxia-tolerant freshwater turtle.

Biggar, K.K. and Storey, K.B. Life in the slow lane: microRNA regulation of cyclin D1 during anoxia stress in *Trachemys scripta elegans*.

Biggar, K.K. and Storey, K.B. Changes in the Rb-E2F pathway during anoxic stress of an anoxia tolerant turtle

Dawson, N.J. and Storey, K.B. An enzymatic bridge between carbohydrate metabolism and amino acid metabolism: Regulation of glutamate dehydrogenase by reversible phosphorylation in crayfish.

Dawson, N.J. and Storey, K.B. An anoxic energy reserve: purification and properties of arginine kinase from the tail muscle of *Orconectes virilis*.

Lant, B. and Storey, K.B. Anoxia induces autophagy in freshwater crayfish.

Luu, B. and Storey, K.B. Akt extinguishes energy expensive activities in the estivating African clawed frog.

Maistrovski, Y. and Storey, K.B. Posttranslational regulation of NFκB during metabolic rate depression in an estivating species, *Xenopus laevis*.

**19<sup>th</sup> Methods in Protein Structure Analysis & 2<sup>nd</sup> China Canada Systems Biology Conference, Ottawa, ON, June 25-28, 2012.**

Luu, B. and Storey, K.B. Akt extinguishes energy expensive activities in the estivating African clawed frog. Maistrovski, Y. and Storey, K.B. Posttranslational regulation of NFκB during metabolic rate depression in an estivating species, *Xenopus laevis*.

Wu, C.-W., Bell, R. and Storey, K.B. Regulation of PTEN function and structural stability in hibernating thirteen-lined ground squirrels.

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Zhang, J. and Storey, K.B. Regulation of mTOR complex 1 in liver of freeze tolerant wood frogs, *Rana sylvatica*.

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Biggar, K., Dawson, N.J. and Storey, K.B. Real-time protein unfolding: a method for determining the kinetics of native protein denaturation using a quantitative real-time thermocycler.

Abboud, J. and Storey, K.B. 2012. An investigation of lactate dehydrogenase in the freeze-tolerant wood frog, *Rana sylvatica*.

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Rouble, A.N. and Storey, K.B. Wake me up with deacetylation: role of SIRT family members in the liver of the hibernating thirteen-lined ground squirrel, *Ictidomys tridecemlineatus*.

**Society for Experimental Biology, Salzburg, Austria, June 29-July 2, 2012.**

\*James, R.S., Staples, J.F., Tessier, S.N., and Storey, K.B. Storey. Does hibernation affect skeletal muscle performance in 13-lined ground squirrels?

**15th International Biochemistry of Exercise Congress, Stockholm, Sweden, June 17-21, 2012.**

\*Brooks, N.E., Myburgh, K.M. and Storey, K.B. Muscle satellite cells increase during hibernation in ground squirrels.

**Experimental Biology, San Diego, CA, April 21-25, 2012. FASEB J., March 29, 2012**

\*Hughey, C., Shearer, J., Storey, K.B. and Hittel, D.S. Reversible suppression of mitochondrial respiration in skeletal muscle of the freeze tolerant wood frog *Rana sylvatica*.

**Society for Integrative and Comparative Biology, Charleston, South Carolina, January 3-7, 2012.**

\*Sinclair, B.J., Stinziano, J.R., Williams, C.M., Marshall, K.E., MacMillan, H.A. and Storey, K.B. Real-time measurements of metabolism during freezing and thawing in wood frogs, *Rana sylvatica*.

**2011**

**14<sup>th</sup> Chemistry & Biochemistry Graduate Research Conference, Concordia Univ., Nov. 18, 2011.**

Maistrovski, Y. and Storey, K.B. The role of HIF-1 and its natural antisense transcript in mammalian hibernation.

Luu, B. and Storey, K.B. Role of myogenic regulatory factors in resistance to muscle disuse atrophy in anoxia tolerant turtles.

**1<sup>st</sup> Canadian Conference on Epigenetics, London, Ontario, May 4-7, 2011.**

\*Alvarado S., Mak T., Liu S., Storey K. and Szyf M. DNA methylation dynamics in the hibernating ground squirrel.

**26<sup>th</sup> Annual meeting, Federação de Sociedades de Biologia Experimental (FeSBE), Rio de Janeiro, Brazil, August 24-27, 2011.**

Lant, B. and Storey, K.B. Anoxia induces autophagy in freshwater crayfish. Biggar, K. and Storey, K.B. Life in the slow lane: microRNA regulation of cyclin D1 during anoxia stress in *Trachemys scripta elegans*.

Holden, H.A. and Storey, K.B. Impact of dehydration on the immune system in African clawed frog.

Zhang, J. and Storey, K.B. Tissue-specific pattern of PI3K-Akt signaling during freezing in wood frog, *Rana sylvatica*. 5<sup>th</sup> annual conference.

Sullivan, K. and Storey, K.B. Transcript expression patterns of the novel freeze responsive genes *li16*, *fr10* and *fr47* in the wood frog, *Rana sylvatica*.

Luu, B. and Storey, K.B. The role of the troponin-tropomyosin complex and dystrophin-related glycoproteins in the hibernating thirteen-lined ground squirrel.

Letourneau, A. and Storey, K.B. Glycerol-3-phosphate dehydrogenase regulation by reversible phosphorylation in hibernating *Spermophilus tridecemlineatus* liver.

Zhang, J. and Storey, K.B. Involvement of microRNA in the activation of Akt/PKB signaling in wood frog liver during freezing.

Rouble, A., Tessier, S. and Storey, K.B. Antiapoptotic signaling as a cytoprotection mechanism during mammalian hibernation.

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Holden, A. and Storey, K.B. Regulation of NADP<sup>+</sup>-dependent isocitrate dehydrogenase by state-dependent reversible phosphorylation in anoxia tolerant red-eared slider turtles, *Trachemys scripta elegans*.

Zhang, J. and Storey, K.B. p53 transcription factor and cell cycle arrest during anoxia in turtles, *Trachemys scripta elegans*.

Dawson, N.J. and Storey, K.B. An anoxic energy reserve: purification and properties of arginine kinase from the tail muscle of *Orconectes virilis*.

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Dawson, N.J. and Storey, K.B. An enzymatic bridge between carbohydrate metabolism and amino acid metabolism: Regulation of glutamate dehydrogenase by reversible phosphorylation in *Orconectes virilis*.

**1st International Ice Binding Protein Conference, Kingston, ON, August 3-6, 2011.**

\*Tomalty, H., Storey, K.B. and Walker, V.K. Surviving winter in a frozen state: the search for ice-binding proteins in a freeze tolerant insect.

**4<sup>th</sup> Intl. Environmental Physiology of Ectotherms and Plants. Rennes, France, July 18-22, 2011.**

\*Sinclair, B.J., Williams, C.M., MacMillan, H.A. and Storey, K.B. Real-time measurements of metabolism during freezing and thawing in wood frogs, *Rana sylvatica*.