

**NATIONALITY:** Canadian

**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 1), Carleton University, Ottawa  
7/85 - Professor, Institute of Biochemistry, Department of Biology and Department of 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:**

2017 Distinguished Editorial Board Member of the journal Genomics, Proteomics &  
Bioinformatics, cited for 2013–2015  
2016 Carleton University Research Achievement Award (also in 2008, 2003, 1998, 1992, 1989)  
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  
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  
1975-1977 Killam Research Fellowship  
1971-1974 NRC Science Centennial Postgraduate Scholarship

**PROFESSIONAL ACTIVITIES:**

**Total research publications: 860**  
**Plenary & keynote lectures: 65**  
Conference scientific committees 6  
Symposia organized: **30**  
Invited lectures at scientific meetings: **115**  
Invited seminars (university, research stations, public lectures): **399**  
Contributed communications with students at scientific meetings: **587**

## SERVICE

**N.S.E.R.C.** Member, Biological Systems and Functions Evaluation Group (EG 1502), 2015-18  
**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, 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, 1997-2005  
  b) Perkin Elmer Corp., Spectroscopy Demo site (1995-2000)  
  c) X-Therma Inc. (biomimetic nanotech), San Francisco, USA (since 2016)

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)

*Past member:* Cryo-Letters (1983-2000), Journal of Comparative Physiology B (1994-2018),  
Journal of Thermal Biology, American Journal of Physiology, Molecular Physiology, Journal of 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 (past)

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:

	<u>Past</u>	<u>Current (2017-18)</u>
Visiting researchers	19	3
Postdoctoral fellows	12	-
Ph.D. Students	36	9
M. Sc. Students	68	3
B.Sc. Honours Students	99	1
NSERC USRA	60	5
Other student researchers	39	2
Technicians	11	-

## **CURRENT RESEARCH FUNDING**

**N.S.E.R.C. Discovery grant:** Mechanisms of metabolic rate depression: following nature's lead. 4/14 - 3/20.  
\$870,000 (extended to 6<sup>th</sup> year)

**N.S.E.R.C. Canada Research Chair in Molecular Physiology, Tier I:** 2001-2022:  
salary, benefits, administration, research. \$200,000 per year.

**N.S.E.R.C. Research Tools and Instruments:** Extreme Life: Microvolume analytics to probe animal adaptation to environmental stress. 4/18-3/19. \$100,499.

## **PAST FUNDING**

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

2016-17 Biochemical adaptation: Analytics to drive next generation research on novel microRNAs and proteins responsive to environmental stress. \$61,997.  
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>P 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 Canada:**

Suspended animation: hypometabolic hearts in a primate hibernator. #G-14-0005874; 7/14 – 6/17, \$201,775  
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:

5/16-4/17	\$15,000	5/98 - 4/99	\$10,000
5/08-4/09	\$15,000	5/92 - 4/93	\$10,000
5/03 - 4/04	\$15,000	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 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:

1/18-2/18	Visiting researcher, Dept. Zoology, University of Pretoria, South Africa
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 courses:

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

### 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

### Current & Recent 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, 2016

Search committee for Director of the Biochemistry Institute, 2016

### 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 2010 - PRESENT

### SUMMARY:

<b>CAREER TOTAL PUBLICATIONS</b>	<b>860 (to end of 2018)</b>
<b>Primary journal articles</b>	<b>704</b>
<b>Invited review articles in journals</b>	<b>50</b>
<b>Invited articles in conference proceedings</b>	<b>47</b>
<b>Book chapters</b>	<b>39</b>
<b>Magazine &amp; encyclopedia articles</b>	<b>13</b>
<b>Books edited</b>	<b>7</b>

### 2019 (to date)

#### Reviews and Chapters

- Logan, S., Watts, A. and Storey, K.B. 2019. Brain dead: The dynamic neuroendocrinological adaptations during hypometabolism in mammalian hibernators. In: Ludwig, M., Levkowitz, G. (eds) *Model Animals in Neuroendocrinology: From worm to mouse to man*. John Wiley & Sons Ltd., Ch. 9, pp. 207-231.
- Hadj-Moussa, H. and Storey, K.B. 2019. Bringing nature back: using hibernation to reboot organ preservation. (Viewpoint) *FEBS J.* 286 (6), 1094-1100. [PMID: 30347515](#) .
- Hadj-Moussa, H., Hawkins, L.J. and Kenneth B. Storey. 2019. Role of microRNAs in extreme animal survival strategies. In: *miRNomics: MicroRNA Biology and Computational Analysis*, edited by M. Yousef and J. Allmer, Humana Press.

#### Journal Articles

- Tessier, S.N., Wu, C.-W. and Storey, K.B. 2019. Molecular control of protein synthesis, glucose metabolism, and apoptosis in the brain of hibernating thirteen-lined ground squirrels. *Biochem. Cell Biol.* Epub Feb 14. [PMID: 30763120](#)
- Childers, C.L. and Storey, K.B. 2019. Purification and characterization of a urea sensitive lactate dehydrogenase from skeletal muscle of the African clawed frog, *Xenopus laevis*. *J. Comp. Physiol. B.* 189, 271-281. [PMID: 30631901](#)
- Hawkins, L.J., Wang, M., Zhang, B., Xiao, Q., Wang, H. and Storey, K.B. 2019. Glucose and urea metabolic enzymes are differentially phosphorylated during freezing, anoxia, and dehydration exposures in a freeze tolerant frog. *Comp. Biochem. Physiol. D* 30, 1-13. [PMID: 30710892](#)
- Al-attar, R., Wijanayake, S. and Storey, K.B. 2019. Metabolic reorganization in winter: regulation of pyruvate dehydrogenase (PDH) during long-term freezing and anoxia. *Cryobiology* 86, 10-18. [PMID: 30639451](#)
- Watts, A.J. and Storey, K.B. 2019. Hibernation impacts lysine methylation dynamics in the thirteen-lined ground squirrel, *Ictidomys tridecemlineatus*. *J. Exp. Zool. A*, Epub Feb 15. [PMID: 30767414](#)
- Logan, S.M., Wu, C.-W. and Storey, K.B. 2019. The squirrel with the lagging eIF2: global suppression of protein synthesis during torpor". *Comp. Biochem. Physiol A* 227, 161-171. [PMID: 30343059](#)
- Hadj-Moussa, H., Watts, A.J. and Storey, K.B. 2019. Genes of the undead: hibernation and death display different gene profiles. *FEBS Lett.* 593, 527-532. [PMID: 30767213](#)
- Green, S.R. and Storey, K.B. 2019. Purification of carbamoyl phosphate synthetase 1 (CPS1) from wood frog (*Rana sylvatica*) liver and its regulation in response to ice-nucleation and subsequent whole-body freezing. *Mol. Cell. Biochem.* Epub Nov 12, 2018 [PMID: 30421312](#)
- Ruberto, A., Logan, S.M. and Storey K.B. 2019. Temperature and serine phosphorylation regulate glycerol-3-phosphate dehydrogenase in skeletal muscle of hibernating Richardson's ground squirrels. *Biochem. Cell Biol.* Epub Sept 25, [PMID: 30253108](#)
- Hoyeck, M.P., Hadj-Moussa, H. and Storey, K.B. 2019. Estivation-responsive microRNAs in a hypometabolic terrestrial snail. *PeerJ* 7, e6515. [PMID: 30809463](#)
- Bayliak, M.M., Abrat, O.B., Storey, J.M., Storey, K.B., and Lushchak, V.I. 2019. Interplay between diet-induced obesity and oxidative stress: comparison between *Drosophila* and mammals. *Comp. Biochem. Physiol. A* 228, 18-28. [PMID: 30385171](#)
- Bayliak, M.M., Lylyk, M.P., Gospodaryov, D.V., Kotsyubynsky, V.O., Butenko, N.V., Storey, K.B. and Lushchak, V.I. 2019. Protective effects of alpha-ketoglutarate against aluminum toxicity in *Drosophila melanogaster*. *Comp. Biochem. Physiol. C* 217, 41-53. [PMID: 30508642](#).
- Sorochynska, O.M., Bayliak, M.M., Vasylyk, Y.V., Kuzniak, O.V., Drohomyska, I.Z., Klonovskyi, A.Y., Storey, J.M., Storey, K.B., Lushchak, V.I. 2019. Intermittent fasting causes metabolic stress and leucopenia in young mice. *Ukrainian Biochem. J.* 91(1), 53-64.
- Lushchak, O.V., Strilbytska, O.M., Yurkevych, I., Vaiserman, A.M., and Storey, K.B. 2019. Implications of amino acid sensing

- and dietary protein to the aging process. *Exp. Gerontol.* 115, 69-78. [PMID: 30502540](#)
- Piskovatska, V., Stefanyshyn, N., Storey, K.B., Vaiserman, A.M., Lushchak, O.V. 2019. Metformin as geroprotector: experimental and clinical evidence. *Biogerontology* 20(1), 33-48. [PMID: 30255224](#)
- Li, L., Chen, M., Storey, K.B. 2019. Metabolic response of longitudinal muscles to acute hypoxia of sea cucumber *Apostichopus japonicus* (Selenka): a metabolome integrated analysis. *Comp. Biochem. Physiol. D* 29, 235-244. [PMID: 30602139](#)
- Chen, B.-J., Zhang, W.-Y., Niu, C.-J., Li, W.-J., Jia, H. and Storey, K.B. 2019. Antioxidant response to acute cold exposure and following recovery in juvenile Chinese soft-shelled turtles, *Pelodiscus sinensis*. *J. Exp. Biol.* 222, jeb197863. [PMID: 30630964](#)
- Zhang, W.-Y., Jia, H., Niu, C., Chen, X.-T. and Storey, K.B. 2019. Effect of exogenous hydrogen peroxide on ROS balance and antioxidant response in Chinese soft-shelled turtle, *Pelodiscus sinensis*. *Aquaculture* 501, 293-303. Doi: 10.1016/j.aquaculture.2018.11.040
- Zhang, W.-Y., Niu, C.-J., Liu, Y. and Storey, K.B. 2019. Positive or negative? The shell alters the relationship among behavioral defense strategy, energy metabolic levels and antioxidant capacity in freshwater turtles. *Front. Zool.* 16, 3. [PMID: 30809267](#)
- Hong, M., Jiang, A., Li, N., Li, W., Shi, H., Storey, K.B. and Ding, L. 2019. Comparative analysis of the liver transcriptome in the red-eared slider *Trachemys scripta elegans* under chronic salinity stress. *PeerJ* 7, e6538. DOI 10.7717/peerj.6538
- Ding, L., Li, W., Li, N., Liang, L., Zhang, X., Jin, H., Shi, H., Storey, K.B., Hong, M. 2019. Antioxidant responses to salinity stress in an invasive species, the red-eared slider (*Trachemys scripta elegans*) and involvement of a TOR-Nrf2 signaling pathway. *Comp. Biochem. Physiol. C* 219, 59-67. [PMID: 30738853](#)
- Zhang, L.-P., Ma, Y., Yu, D.-N., Storey, K.B. and Zhang, J.-Y. 2019. The mitochondrial genomes of *Statilia maculata* and *S. nemoralis* (Mantidae: Mantinae) with different duplications of trnR genes. *Int. J. Biol. Macromol.* 121, 839-845. [PMID: 30340009](#)

## 2018

### Reviews and Chapters

861. Wu, C.W. and Storey, K.B. 2018. Hibernation and aging: molecular mechanisms of mammalian hypometabolism, and its links to longevity. *In* *Aging: Exploring a Complex Phenomenon* (Ahmad, S.I., ed.), CRC Press, Boca Raton, Ch. 34, pp. 617-633.
860. Biggar, K.K. and Storey, K.B. 2018. Functional impact of microRNA regulation in models of extreme stress adaptation. *J. Mol. Cell Biol.* 10(2), 93-101. [PMID: 29206937](#)
859. Hawkins, L.J., Al-attar, R. and Storey, K.B. 2018. Transcriptional regulation of metabolism in disease: from transcription factors to epigenetics. *PeerJ* 6, e5062. [PMID: 29922517](#)
858. Zhang, Y. and Storey, K.B. 2018. Life in suspended animation: the role of chaperone proteins in vertebrate and invertebrate stress adaptation. *In: Heat Shock Proteins in Stresses* (Asea, A.A.A. and Kaur, P., eds.) Springer International, Dordrecht. Ch. 5, pp. 95-137.
857. Luu, B.E and Storey, K.B. 2018. Solving donor organ shortage with insights from freeze tolerance in nature: activating endogenous antioxidant systems with non-coding RNA to precondition donor organs. *BioEssays* 40(10), e1800092. (Commentary) [PMID: 30152131](#)
856. Hadj-Moussa, H., Green, G.R. and Storey, K.B. 2018. The living dead: mitochondria and metabolic arrest. *IUBMB Life* 70(12), 1260-1266. [PMID: 30230676](#)
855. Lushchak, V.I., Matviishyn, T.M., Husak, V.V., Storey, J.M., Storey, K.B. 2018. Pesticide toxicity: a mechanistic approach. *EXCLI J.* 17, 1101-1136. [PMID: 30564086](#)

### Journal Articles

855. Bell, R.A.V. and Storey, K.B. 2018. Purification and characterization of skeletal muscle pyruvate kinase from the hibernating ground squirrel, *Urocyon richardsonii*: potential regulation by posttranslational modification during torpor. *Mol. Cell Biochem.* 442(1-2), 47-58. [PMID: 28918505](#)
854. Wu, C.-W. and Storey, K.B. 2018. Regulation of Smad mediated microRNA transcriptional response in ground squirrels during hibernation. *Mol. Cell. Biochem.* 439, 151-161. [PMID: 28780752](#)
852. Wu, C.-W., Tessier, S.N. and Storey, K.B. 2018. Stress-induced antioxidant defense and protein chaperone response in the freeze-tolerant wood frog *Rana sylvatica*. *Cell Stress Chaperones* 23, 1205-1217. [PMID: 29951989](#)
851. Zhang, J. and Storey, K.B. 2018. RBiomirGS: An all-in-one miRNA gene set analysis solution featuring target mRNA mapping and expression profile integration. *PeerJ* 6, e4262. [PMID: 29340253](#)
850. Biggar, K.K. and Storey, K.B. 2018. The evaluation of anoxia responsive E2F DNA binding activity in the red-eared slider turtle, *Trachemys scripta elegans*. *PeerJ* 6, e4755. [PMID: 29770276](#)
849. Biggar, K.K., Luu, B.E., Wu, C.-W., Pifferi, F., Perret, M. and Storey, K.B. 2018. Identification of novel and conserved



- microRNA and their expression in the gray mouse lemur, *Microcebus murinus*, a primate capable of daily torpor. *Gene* 677, 332-339. [PMID: 30103007](#)
848. Dawson, N.J., Biggar, Y., Malik, A.I. and Storey, K.B. 2018. Increased transcript levels and kinetic function of pyruvate kinase during severe dehydration in aestivating African clawed frogs, *Xenopus laevis*. *Comp. Biochem. Physiol. B* 224, 245-252. [PMID: 29331521](#)
847. Wijenayake, S., Luu, B.E., Zhang, J., Tessier, S.N., Quintero-Galvis, J.F., Gaitán-Espitia, J.D., Nespolo, R.F. and Storey, K.B. 2018. Strategies of biochemical adaptation for hibernation in a South American marsupial *Dromiciops gliroides*: 1. Mitogen-activated protein kinases and the cell stress response. *Comp. Biochem. Physiol. B* 224, 12-18. [PMID: 29247845](#).
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## **KENNETH B. STOREY**

### **LECTURES AND CONFERENCE PRESENTATIONS**

#### **CAREER SUMMARY**

<b>Invited Plenary, Keynote or Named Lectures:</b>	<b>65</b>
<b>Member of Conference Scientific Committees</b>	<b>5</b>
<b>Conference Symposia Organized</b>	<b>30</b>
<b>Invited Lectures in Symposia at Scientific Meetings</b>	<b>112</b>
<b>Invited Seminars (at universities, research stations, public lectures)</b>	<b>399</b>
<b>Contributed Communications with Students at Scientific Meetings</b>	<b>587</b>

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

- Evolutionary adaptations to stress: lessons from animals in extreme environments. Keynote address. Lung health and disease across age, environment and species, Gordon Research Conference, Colby-Sawyer College, New London, NH, Aug. 20-24, 2017.
- Peter Hochachka: roots and branches. Satellite Symposium: 50 years of comparative biochemistry: the legacy of Peter Hochachka. Canadian Society of Zoologists, Winnipeg, Manitoba, May 13-14, 2017.
- Life on pause: Epigenetic mechanisms underlie global metabolic rate depression. Ottawa-Carleton Institute of Biology Conference, Graduate Research Day, University of Ottawa, Ottawa, May 5-6, 2016.
- 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 (Graduate Research day), 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: it's all in the genes. CRYO-2007, 44th Annual Meeting of the Society for Cryobiology, Lake Louise, Alberta, July 28-August 1, 2007.

## **CONFERENCE SCIENTIFIC COMMITTEES:**

Society for Cryobiology, Ottawa, Ontario, July 23-27, 2016.

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)**

Nature's way. Society for Cryobiology, Ottawa, July 23-27, 2016. (full day symposium, 13 speakers)

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 AT SCIENTIFIC MEETINGS: 2007 - Present (79 others 2006 & earlier)**

Hypoxia/anoxia adaptation: extremeophiles point to new high altitude experiments. 13<sup>th</sup> International Conference on Genomics, Shenzhen, China. October 25-28, 2018.

The living dead: mitochondria and metabolic arrest. 4<sup>th</sup> International Congress of the Serbian Society for Mitochondrial and Free Radical Physiology, Belgrade, Serbia, September 28-29, 2018.

The living dead: Metabolic arrest for survival during winter hibernation. Conference: Bats – A New Model for Healthy Aging. Banbury Conference Center, Cold Spring Harbor Laboratory, March 11-14, 2018.

Turning the switch to OFF: hypometabolism of organs at any temperature. Organ Banking Summit, Boston, August 3-6, 2017.

What do hibernating mammals tell us about the elastic limits of tissue function. American Society for Nutrition, Experimental Biology 2017, Chicago, IL. April 22-26, 2017.

The living dead: mitochondria and metabolic arrest. 115<sup>th</sup> International Titisee Conference “Evolutionary mitochondrial biology: molecular, biochemical, and metabolic diversity” Titisee, Germany, March 29 - April 2, 2017.

Cold case files: molecular mechanisms of insect winter hardiness. XXV International Congress of Entomology, Orlando, FL. September 25-30, 2016.

Life on pause: epigenetic mechanisms underlie metabolic stasis in cold-adapted animals. 53<sup>rd</sup> annual meeting, Society for Cryobiology, Ottawa, July 23-27, 2016. Cryobiology 73, 429 (2016)

Mammals on ice: molecular secrets of winter hibernation. Wenner-Gren Symposium -Brown Adipose Tissue and Eutherma. Wenner-Gren Center, Stockholm, May 25-28, 2016.

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)**

Survival in extreme environments: mammalian torpor and hibernation. Honours Research day, Department of Biology, Queen's University, Kingston, Ontario, March 8, 2019.

Living dead: metabolic arrest and survival in marine environments. School of Biological Sciences, The University of Hong Kong, October 22, 2018.

Metabolic arrest in mammals. Department of Zoology, University of Pretoria, South Africa, February 9, 2018.

Strategies for expanding international partnerships from NSERC funding. Invited panel speaker. Science and Research Sector, Innovation, Science and Economic Development Canada. Ottawa, January 18, 2018.

Living dead: metabolic arrest and the control of biological time. Department of Medicine, University of Illinois at Chicago, Chicago, IL, April 26, 2017.

The living dead: metabolic arrest and the control of biological time. School of Biological Sciences, Royal Holloway University of London, Egham, UK, March 22 2017.

Metabolic arrest, estivation and survival strategies in the marine environment. Evenings at Whitney, Whitney Laboratory for Marine Bioscience, St. Augustine, FL. February 9, 2017.

Hypometabolism and survival of environmental extremes. Department of Biology, University of Florida, Gainesville, FL. February 7, 2017.

The living dead: metabolic arrest and the control of biological time. Department of Biology, University of Ottawa, Ottawa, ON. November 28, 2016.

Survival strategies for life in extreme environments. Department of Biology, Queen's University, Kingston, ON. November 22, 2016.

The living dead: metabolic arrest and the control of biological time. Department of Biology, University of Waterloo, Waterloo, ON. October 21, 2016.

The living dead: metabolic arrest and the control of biological time. College of Marine Science, University of South Florida, St. Petersburg, FL. September 23, 2016.

Insects: enzyme phosphorylation drives winter metabolism of cryoprotectants. Department of Zoology, Stockholm University, Stockholm, Sweden, May 25, 2016.

Department of Biology, The living dead: estivation and survival strategies in a marine environment. Trent University, Peterborough, ON, March 16, 2016.

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

The living dead: natural metabolic arrest and implications for organ preservation. Department of Mechanical Engineering and Engineering Sciences, University of North Carolina at Charlotte, Charlotte, NC, October 29, 2015.

The living dead: torpor and hibernation as mammalian strategies of winter survival. 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 rate depression 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.

### **CONTRIBUTED COMMUNICATIONS AT SCIENTIFIC MEETINGS BY THE STOREY LAB: 2014 - Present (400 others 2012 & earlier)**

Following are recent poster presentations 2013-2017; most are by trainees from my lab but some (\*) report research with collaborators from other institutions.

#### **2018**

##### **21<sup>st</sup> Chemistry & Biochemistry Graduate Research Conference (CBGRC 2018), Concordia Univ., Nov. 9, 2018**

Hadj-Moussa, H. and Storey, K.B. Genes of the undead: Do hibernators and zombies display similar expression profiles. (oral)  
 Al-attar, R., Mahrous, S., Robert, J. and Storey, K.B. GATA4-mediated gene expression promotes muscle remodeling during stress in the freeze-tolerant wood frog *Rana sylvatica*. (poster)  
 Gupta, A. and Storey, K.B. OCT induced transcriptional network in the freeze-tolerant wood frog. (poster)  
 Lung, Z. and Storey, K.B. Peroxiredoxin expression in the wood frog, *Rana sylvatica* in response to freezing. (poster)  
 Watts, A. and Storey, K.B. m6A methylation alters translational activity during hibernation in a small mammal, the 13-lined ground squirrel. (poster)  
 Green, S. and Storey, K.B. Regulation of the TCA cycle through modification of the  $\alpha$ -ketoglutarate dehydrogenase complex in a mammalian hibernator, the Richardson's ground squirrel (*Urocyon richardsonii*). (poster)  
 Singh, G. and Storey, K.B. Mondo A: a key regulator of sugar-induced gene expression in frozen wood frogs, *Rana sylvatica*.  
 Szareszewski, K. and Storey, K.B. Novel research – biochemistry and molecular biology of environmental stress. (poster)  
 Storey, K.B. Gene regulation during hypometabolism – coping with environmental stress. (poster)

##### **13<sup>th</sup> International Conference on Genomics, Shenzhen, China. October 25-28, 2018.**

English, S.G., Hadj-Moussa and Storey, K.B. The functional role of microRNAs in the anoxia tolerant northern crayfish, *Orconectes virilis*.  
 Hawkins, L.J. and Storey, K.B. Changes in histone methyltransferases during freezing stress in the wood frog, *Rana sylvatica*.  
 Hoyeck, M., Hadj-Moussa, H. and Storey, K.B. Regulation of MEF2 proteins and downstream targets in muscles of dehydrated and anoxic wood frogs.  
 Al-attar, R. and Storey, K.B. Regulation of autophagy-related proteins in the freeze-tolerant wood frog, *Rana sylvatica*.  
 Lung, Z. and Storey, K.B. DNA damage and repair mechanisms in the freeze-tolerant wood frog, *Rana sylvatica*.

##### **4<sup>th</sup> International Congress of the Serbian Society for Mitochondrial and Free Radical Physiology, Belgrade, Serbia, September 28-29, 2018.**

Hadj-Moussa, H., Moggridge, J.A., Luu, B.E., Quintero-Galvis, J.F., Gaitán-Espitia, J.D., Nespolo, R.F., Storey, K.B.. The hibernating South American marsupial, *Dromiciops gliroides*, displays torpor-sensitive microRNA expression patterns.  
 Watts, A., Storey, K.B. Lysine methylation regulates transcriptional control during hibernation *Ictidomys tridecemlineatus*.

Szereszewski, K., Storey, K.B. A little PARP of DNA damage and repair during hibernation in the thirteen-lined ground squirrel.

Logan, S.M., Storey, K.B. The response of cold-shock RNA-binding proteins during hibernation in 13-lined ground squirrels.

**The Protein Society, 32<sup>nd</sup> Annual Symposium, Boston, MA, July 9-13.**

Childers, C. and Storey, K.B. Creatine kinase post-translational modification in metabolic depression.

**Canadian Society for Chemistry, Edmonton, Alberta, May 27-31.**

\*Blank, K., \*Canez, C.R., Williamson, S., \*Thomas, G., \*Weinert, H, Storey, K.B. and \*Smith, J.C. Investigating the lipidomic dynamics of extreme temperature changes.

**Ottawa-Carleton Biology Institute, Ottawa, ON, May 3.**

English, S.G., Storey, K.B. The functional role of microRNAs in the anoxia tolerant northern crayfish, *Orconectes virilis*.

Lung, Z., Storey, K.B. DNA damage and repair mechanisms in the wood frog, *Rana sylvatica*.

Mattice, J., Storey, K.B. Glutathione reductase in response to ischemic stress in the dehydration-tolerant African clawed frog, *Xenopus laevis*.

**2017**

**Lung health and disease across age, environment and species, Gordon Research Conference, Colby-Sawyer College, New London, NH, Aug. 20-24, 2017.**

Hadj-Moussa, H., Moggridge, J.A., Luu, B.E., Quintero-Galvis, J.F., Gaitán-Espitia, J.D., Nespolo, R.F., Storey, K.B.. The hibernating South American marsupial, *Dromiciops gliroides*, displays torpor-sensitive microRNA expression patterns.

Logan, S.M., Storey, K.B. The response of cold-shock RNA-binding proteins during hibernation in 13-lined ground squirrels.

Luu, B.E., Biggar, K.K., Wu, C.W., Storey, K.B. Torpor-responsive expression of species-specific microRNA in the thirteen-lined ground squirrel, *Ictidomys tridecemlineatus*.

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*.

Szereszewski, K., Storey, K.B. A little PARP of DNA damage and repair during hibernation in the thirteen-lined ground squirrel.

Watts, A., Storey, K.B. Lysine methylation provides epigenetic control over cellular processes during hibernation in the thirteen-lined ground squirrel.

**Organ Banking Summit, Harvard University, Boston, Aug. 3-6, 2017**

Hadj-Moussa, H., Moggridge, J.A., Luu, B.E., Quintero-Galvis, J.F., Gaitán-Espitia, J.D., Nespolo, R.F., Storey, K.B.. The hibernating South American marsupial, *Dromiciops gliroides*, displays torpor-sensitive microRNA expression patterns.

Logan, S.M., Storey, K.B. The response of cold-shock RNA-binding proteins during hibernation in 13-lined ground squirrels.

Watts, A., Storey, K.B. Lysine methylation provides epigenetic control over cellular processes during hibernation in the thirteen-lined ground squirrel.

Szereszewski, K., Storey, K.B. A little PARP of DNA damage and repair during hibernation in the thirteen-lined ground squirrel.

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*.

Luu, B.E., Biggar, K.K., Wu, C.W., Storey, K.B. Torpor-responsive expression of species-specific microRNA in the thirteen-lined ground squirrel, *Ictidomys tridecemlineatus*.

**Toronto RNA Enthusiasts Day, Toronto, August 2, 2017.**

Al-attar, R., Hawkins, L.J., Bedard, N., Wing, S.S., and Storey, K.B. Differential regulation of microRNAs in the liver of USP19 null mice during fasting.

Hadj-Moussa, H. and Storey, K.B. Biogenesis and regulation of protective microRNAs in a model of natural vertebrate freeze tolerance.

**American Society for Mass Spectrometry, 65<sup>th</sup> Conference, Indianapolis, June 4-8, 2017.**

\*Blank, K., Williamson, S., Weinert, H., Canez, C.R., Storey, K.B. and Smith, J.C. Investigating the lipidomic dynamics of torpor through examination of hibernating squirrel liver tissue and dehydrated frog leg tissue.

**Canadian Society for Molecular Biosciences, Ottawa, May 16-20, 2017.**

- Logan, S.M., Storey, K.B. The response of cold-shock RNA-binding proteins during hibernation in 13-lined ground squirrels.
- Al-attar, R., Storey, K.B. Surviving anoxia: regulation of the autophagy-related proteins in the freeze-tolerant wood frog, *Rana sylvatica*.
- Watts, A., Storey, K.B. Lysine methylation provides epigenetic control over cellular processes during hibernation in the thirteen-lined ground squirrel.
- Mattice, J.L., Storey, K.B. Examining the mechanism of glutamate dehydrogenase regulation in the dehydrating African clawed frog, *Xenopus laevis*.
- Hadj-Moussa, H., Storey, K.B. Biogenesis and regulation of protective microRNAs in a model of natural vertebrate freeze tolerance.
- Nguyen, T.D., Storey, K.B. Balancing carbon and nitrogen metabolism with glutamate dehydrogenase in the freeze tolerant wood frog.
- Szerezewski, K., Storey, K.B. A little PARP of DNA damage and repair during hibernation in the thirteen-lined ground squirrel.
- Hawkins, L., Storey, K.B. Epigenetic regulators in the dehydration tolerant *Xenopus laevis*.
- Childers, C., Storey, K.B. Regulation of NADP isocitrate dehydrogenase in the dehydrating African clawed frog, *Xenopus laevis*.
- Green, S.R., Storey, K.B. Regulation of CPS1 is an important regulatory aspect of freeze tolerance in the wood frog (*Rana sylvatica*).

**Canadian Society of Zoologists, University of Manitoba, Winnipeg, MB, May 15-19, 2017.**

- Seibel, B., Luu, B.E., Tessier, S.N., Storey, K.B. Critical oxygen and metabolic suppression in the pelagic red crab, *Pleuroncodes planipes*. (talk given by Ken)

**Canadian Society of Zoologists, Satellite Symposium: 50 years of comparative biochemistry – the legacy of Peter Hochachka. University of Manitoba, Winnipeg, MB, May 13-14, 2017. (posters)**

- Hawkins, L.J., Storey, K.B. Changes in histone methyltransferases during freezing stress in the wood frog.
- Logan, S.M., Storey, K.B. Turn down gene expression for WAT: Anti-apoptotic signaling protects white adipose tissue in hibernating 13-lined ground squirrels.
- Green, S.R., Storey, K.B. Regulation of liver glutamate dehydrogenase activity in response to freezing in the wood frog (*Rana sylvatica*).
- Wijenayake, S., Tessier, S.N., Storey, K.B. No need to diet – just control your metabolism! Regulation of pyruvate dehydrogenase (PDH) in hibernating ground squirrels (*Ictidomys tridecemlineatus*).
- Hadj-Moussa, H., Moggridge, J.A., Luu, B.E., Quintero-Galvis, J.F., Gaitán-Espitia, J.D., Nespolo, R.F., Storey, K.B. The hibernating South American marsupial, *Dromiciops gliroides*, displays torpor-sensitive microRNA expression patterns.
- Seibel, B.A., Luu, B.E., Tessier, S.N., Storey, K.B. Metabolic suppression in the pelagic red crab, *Pleuroncodes planipes*, in oxygen minimum zones.

**14<sup>th</sup> Ottawa-Carleton Institute for Biology conference, Carleton University, April 27-28, 2017.**

- Logan, S.M., Storey, K.B. The response of cold-shock RNA-binding proteins during hibernation in 13-lined ground squirrels.
- Green, S.R., Storey, K.B. Regulation of CPS1 is an important regulatory aspect of freeze tolerance in the wood frog (*Rana sylvatica*).
- Nguyen, T., Storey, K.B. Regulation of skeletal muscle glutamate dehydrogenase from the freeze tolerant *Rana sylvatica*.
- Mattice, A., Storey, K.B. Regulation of NADP-dependent isocitrate dehydrogenase under a dehydrated state in the African clawed frog, *Xenopus laevis*.
- Mattice, J., Storey, K.B. Examining the mechanism of glutamate dehydrogenase regulation in the dehydrating African clawed frog, *Xenopus laevis*.
- MacLean, I., Storey, K.B. Purification and characterization of NADP-dependent isocitrate dehydrogenase in skeletal muscle of the ground squirrel, *Urocyon richardsonii*.
- Hoyeck, M., Storey, K.B. Regulation of MEF2 proteins and downstream targets in muscles of dehydrated and anoxic wood frogs.

**2016**

**Brain Health Research Day, Carleton University, Ottawa, June 24, 2016**

- Gerber, A.E.M., Storey, K.B. Role of microRNA in innate neuroprotection during torpor stress in thirteen-lined ground squirrels, *Ictidomys tridecemlineatus*.

Luu, B.E., Smolinski, M.B., Lamont, E.W., Abizaid, A., Storey, K.B. Chronic social stress alters microRNA expression in the amygdala, hippocampus, prefrontal cortex and cerebellum.

**Society for Cryobiology, Ottawa, July 23-27, 2016.**

- Wijenayake, S., Al-Attar, R., Tessier, S.N. Storey, K.B. Hibernation vs freezing: the tale of metabolic reorganization in winter. (oral), *Cryobiology* 73, 427 (2016)
- Luu, B., Biggar, K.K., Wu, C.-W., Storey, K.B. Cold sensitive novel microRNAs in the hibernating 13-lined ground squirrel, *Ictidomys tridecemlineatus*. (oral). *Cryobiology* 73, 430 (2016).
- Childers, C., Storey, K.B. Regulation of EGFR, MAPK, HSPs and anti-apoptosis pathways in the heart of the mammalian hibernator, *Ictidomys tridecemlineatus*. (oral). *Cryobiology* 73, 426 (2016)
- Zhang, Y., Tessier, S.N., Storey, K.B. Expression of nuclear factor of activated T cells (NFAT) and downstream muscle-specific proteins in ground squirrel skeletal and heart muscle during hibernation. *Cryobiology* 73, 436 (2016)
- Szerezewski, K., Storey, K.B. The importance of fats – PPAR regulation during hibernation. *Cryobiology* 73, 437 (2016)
- Al-Attar, R., Storey, K.B. Surviving winter: NFATs regulate cryoprotection in freeze-tolerant *Rana sylvatica*. (oral). *Cryobiology* 73, 430 (2016).
- Watts, A., Storey, K.B. Lysine methylation regulates transcriptional control during hibernation in the 13-lined ground squirrel, *Ictidomys tridecemlineatus*. *Cryobiology* 73, 435 (2016).
- Hawkins, L., Storey, K.B. Changes in histone methyltransferases during freezing stress in the wood frog, *Rana sylvatica*. *Cryobiology* 73, 437-8 (2016).
- Williamson, Storey, K.B. Changes in DNA methyltransferase expression in *Epiblema scudderiana* and *Eurosta solidaginis*. *Cryobiology* 73, 435 (2016).
- Logan, S., Storey, K.B. Response of the JAK-STAT pathway to mammalian hibernation in 13-lined ground squirrel striated muscle. (oral) *Cryobiology* 73, 426 (2016)
- Hadj-Moussa, H., Storey, K.B. Micromanaging freeze tolerance: the role of microRNAs in regulating brain cryoprotection. (oral). *Cryobiology* 73, 427 (2016).
- Green, S., Storey, K.B. Regulation of liver glutamate dehydrogenase activity in response to freezing in the wood frog (*Rana sylvatica*). *Cryobiology* 73, 432 (2016)
- Nguyen, T., Storey, K.B. Regulation of skeletal muscle glutamate dehydrogenase from the freeze tolerant *Rana sylvatica*. *Cryobiology* 73, 437 (2016)
- Mattice, J., Smolinski, M., Storey, K.B. Regulation of muscle pyruvate kinase during freezing in wood frogs, *Rana sylvatica*. *Cryobiology* 73, 437 (2016)
- Tomalty, H., Storey, K.B., Walker, V.K. Identification of ice-binding activity in the gall fly and its goldenrod host. *Cryobiology* 73, 439 (2016)

**13<sup>th</sup> annual Ottawa-Carleton Institute of Biology, University of Ottawa, May 5-6, 2016**

- Luu, B.E., Biggar, K.K., Wu, C.W., Storey, K.B. Torpor-responsive expression of species-specific microRNA in the thirteen-lined ground squirrel, *Ictidomys tridecemlineatus*.
- Childers, C.L., Green, S., Dawson, N.J., Storey, K.B. Native denaturation differential scanning fluorimetry: a method for determining the kinetic effect of urea using a quantitative real-time thermocycler.
- Zhang, Y., Storey, K. Regulation of gene expression by NFAT transcription factors is dependent on the cellular environment in hibernating ground squirrels. BEST POSTER AWARD
- Hawkins, L., Storey, K. Histone methylation in the freeze-tolerant wood frog (*Rana sylvatica*).
- Watts, A., Storey, K.B. Regulation of lysine methylation during torpor cycle in 13-lined ground squirrel, *Ictidomys tridecemlineatus*.
- Rasha Al-Attar, Storey, K.B. Surviving diabetes: the tale of NFAT and the frozen frog.
- Williamson, S., Storey, K.B. Changes in DNA methylation mediate the physiological changes underpinning freeze tolerance and freeze avoidance in the overwintering insects *Eurosta solidaginis* and *Epiblema scudderiana*.
- Hadj-Moussa, H., Moggridge, J.A., Luu, B.E., Quintero-Galvis, J.F., Gaitán-Espitia, J., Nespolo, R.F., Storey, K.B. Torpor triggers differential microRNA expression in hibernating South American marsupials.
- Logan, S.M., Tessier, S.N., Tye, J., Storey, K.B. Response of the JAK-STAT pathway to mammalian hibernation in 13-lined ground squirrel striated muscle.
- Green, S.R., Storey, K.B. Regulation of liver glutamate dehydrogenase activity in response to freezing in the wood frog (*Rana sylvatica*).
- Nguyen, T.N., Storey, K.B. Regulation of muscle glutamate dehydrogenase from a freeze tolerant wood frog.
- Mattice, J., Storey, K. Regulation of liver glutamate dehydrogenase in response to dehydration in the African clawed frog, *Xenopus laevis*.

Gerber, A.E.M., Storey, K.B. Torpor-induced regulation of the AGO2-microRNA complex in the brain of thirteen-lined ground squirrels, *Ictidomys tridecemlineatus*.

## **2015**

### **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 gliroides*.
- 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.

### **9<sup>th</sup> 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*.

Szerezewski, 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.

## **2014**

### **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.

Szerezewski, 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. 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.**

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.

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

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

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.

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

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

**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.