

KENNETH B. STOREY**www.kenstoreylab.com****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, 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:

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
 1971-1974 NRC Science Centennial Postgraduate Scholarship

PROFESSIONAL ACTIVITIES:

Total research publications: 844
Plenary & keynote lectures: 65
 Conference scientific committees **5**
 Symposia organized: **30**
 Invited lectures at scientific meetings: **110**
 Invited seminars (university, research stations, public lectures): **398**
 Contributed communications with students at scientific meetings: **564**

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

SERVICE (cont'd)

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)

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 (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 - 3/19.
\$725,000

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 ³²Phosphor 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

SUMMARY:

Career total research publications:	844
including:	
Invited articles in conference proceedings:	47
Invited review articles:	48
Book chapters:	38
Magazine & encyclopedia articles:	13
Books edited	7

2018

Reviews and Chapters

- 844.** 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.
- 843.** Biggar, K.K. and Storey, K.B. 2018. Functional impact of microRNA regulation in models of extreme stress adaptation. *J. Mol. Cell Biol.* Epub Dec 1. [PMID: 29206937](#)
- 842.** Luu, B.E and Storey, K.B. 2018. Freezing frogs to freeze organs (commentary). *PLoS One*, submitted Feb. 26.
- 841.** Hadj-Moussa, H., Green, G.R. and Storey, K.B. 2018. The living dead: mitochondria and metabolic arrest. *IUMB Life*, submitted Apr 18/18.
- 840.** Logan, S., Watts, A., Storey, K.B. 2018. 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*. Wiley-Blackwell, in press.
- 839.** Lushchak, V.I., Matviishyn, T.M., Husak, V.V., Storey, J.M. and Storey, K.B. 2018. Pesticide toxicity: a mechanistic approach. *Pestic. Biochem. Physiol.*, submitted Nov. 19/17.

Journal Articles

- 838.** Bell, R.A.V. and Storey, K.B. 2018. Purification and characterization of skeletal muscle pyruvate kinase from the hibernating ground squirrel, *Urociotellus richardsonii*: potential regulation by posttranslational modification during torpor. *Mol. Cell Biochem.* 442(1-2), 47-58. [PMID: 28918505](#)
- 837.** 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](#)
- 836.** 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](#)
- 835.** 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* submitted Feb 26, MS25453
- 834.** 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*, Epub Jan 10. [PMID: 29331521](#)
- 833.** 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*, Epub Dec 13, 2017, [PMID: 29247845](#).
- 832.** 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*: 4. Regulation of pyruvate dehydrogenase complex and metabolic fuel selection. *Comp. Biochem. Physiol. B*, Epub Dec 13, 2017, [PMID: 29247844](#).
- 831.** Wijenayake, S., Hawkins, L.J. and Storey, K.B. 2018. Dynamic regulation of six histone H3 lysine (K) methyltransferases in response to prolonged anoxia exposure in a freshwater turtle. *Gene* 639, 50-57. [PMID: 29382574](#)
- 830.** Luu, B.E., Wijenayake, S., Malik, A.I. and Storey, K.B. 2018. The regulation of heat shock proteins in response to dehydration in *Xenopus laevis*. *Cell Stress Chaperones* 23(1), 45-53. [PMID: 28676984](#)
- 829.** Luu, B.E., Wijenayake, S., 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*: 2. Control of the Akt pathway and protein translation machinery. *Comp. Biochem. Physiol. B*, Epub Dec 13, 2017, [PMID: 29247846](#).
828. Luu, B.E., Wijenayake, S., 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*: 3. Activation of pro-survival response pathways. *Comp. Biochem. Physiol. B*, Epub Dec 14, 2017, [PMID: 29248591](#).
827. Szereszewski, K. and Storey, K.B. 2018. Translational regulation in the anoxic turtle, *Trachemys scripta elegans*. *Mol. Cell. Biochem.* Epub Dec 14, 2017. [PMID: 29243067](#)
826. Al-attar, R. and Storey, K.B. 2018. Effects of anoxic exposure on the nuclear factor of activated T cells (NFATs) transcription factors in the stress tolerant wood frog, *Rana sylvatica*. *Cell Biochem. Funct.* Submitted Jan 2, 2018.
825. Hawkins, L.J. and Storey, K.B. 2018. Histone methylation in the freeze tolerant wood frog (*Rana sylvatica*). *J. Comp. Physiol.* 188:113–125. [PMID: 28601897](#)
824. Rouble, A.N., Hawkins, L.J. and Storey, K.B. 2018. Roles for lysine acetyltransferases during mammalian hibernation. *J Thermal Biol* 74, 71-76. doi.org/10.1016/j.jtherbio.2018.03.013
823. Zhang, G., Storey, J.M. and Storey, K.B. 2018. Elevated chaperone proteins are a feature of winter freeze avoidance by larvae of the goldenrod gall moth, *Epiblema scudderiana*. *J. Insect Physiol.* 106(2), 106-113. [PMID: 28433751](#)
822. Zhang, Y., Luu, B.E., Storey, K.B. 2018. FoxO4 activity is regulated by phosphorylation and the cellular environment during dehydration in the African clawed frog, *Xenopus laevis*. *Biochim. Biophys. Acta General Subjects*, in press
821. Hadj-Moussa, H. and Storey, K.B. 2018. Micromanaging freeze tolerance: The biogenesis and regulation of neuroprotective microRNAs in frozen brains. *Cell. Mol. Life Sci.*, in press, accepted Apr 17/18.
820. Hadj-Moussa, H., Logan, S.M., Seibel, B.A. and Storey, K.B. 2018. Jumbo squid use microRNA to regulate hypoxia-induced metabolic suppression. *Biochim. Biophys. Acta*, submitted Jan 26/18.
819. Logan, S.M. and Storey, K.B. 2018. Pro-inflammatory AGE-RAGE signaling is activated during arousal from hibernation in ground squirrel adipose. *PeerJ* submitted Feb 24.
818. Mattice, A.M., MacLean, I.A., Childers, C.L. and Storey, K.B. 2018. Characterization of pyruvate kinase from the anoxia tolerant turtle, *Trachemys scripta elegans*: A potential role for enzyme methylation during metabolic rate depression. *PeerJ* Submitted Feb 27.
817. English, S., Al-attar, R. and Storey, K.B. 2018. NFAT5 regulation during dehydration in the liver and skeletal muscle of *Xenopus laevis*. *J. Comp. Physiol. B*, submitted Mar 28/18.
816. Seibel, B.A., Luu, B.E., Tessier, S.N., Towanda, T. and Storey, K.B. 2018. Metabolic suppression in the pelagic crab, *Pleuroncodes planipes*, in oxygen minimum zones. *Comp. Biochem. Physiol. B* Epub Dec 27, [PMID: 292882744](#)
815. Holahan, M.R., Smith, C.A., Luu, B.E. and Storey, K.B. 2018. Preadolescent phthalate (DEHP) exposure is associated with a reduced number of tyrosine hydroxylase positive neurons and elevated locomotor activity in post-adolescent male rats. *Neuropharmacology*, submitted Nov. 1/17.
814. Nespolo, R., Gaitán-Espitia, J.D., Quintero-Galvis, J., Fernandez, F., Silva, A., Molina, C., Storey, K., Bozinovic, F. 2018. A functional transcriptomics analysis in the relict marsupial *Dromiciops gliroides* reveals adaptive regulation of hibernation. *Nature Ecology & Evolution*, submitted Apr. 16/18.
813. Zhao, M., Wang, T., Stewart, M.J., Bose, U., Suwansa-Ard, S., Storey, K.B. and Cummins, S.F. 2018. eSnail: a transcriptome-based molecular resource of the central nervous system for terrestrial gastropods. *Mol. Ecol. Resources* 18(1), 147-158. [PMID: 28960889](#)
812. Chanon, S., Chazarin, B., Toubhans, B., Durand, C., Chery, I., Robert, M., Vieille-Marchiset, A., Swenson, J.E., Zedrosser, A., Evans, A., Brunberg, S., Arnemo, J.M., Gauquelin-Koch, G., Storey, K.B., Simon, C., Blanc, S., Bertile, F., Lefai, E. 2018. Proteolysis inhibition by winter bear serum leads to increased protein content in human muscle cells. *Sci. Rep.* 8(1); 5525. [PMID: 29615761](#)
811. Abrat, O.B., Storey, J.M., Storey, K.B. and Lushchak, V.I. 2018. High amylose starch consumption induces obesity in *Drosophila melanogaster* and metformin partially prevents accumulation of storage lipids and shortens lifespan of the insects. *Comp. Biochem. Physiol. A.* 215, 55-62. [PMID: 29054808](#)

810. Bayliak, M.M., Lylyk, M.P., Maniukh, O.V., Storey, J.M., Storey, K.B. and Lushchak, V.I. 2018. Dietary L-arginine accelerates pupation and promotes high protein levels but induces oxidative stress and reduces fecundity and life span in *Drosophila melanogaster*. *J. Comp. Physiol. B* 188, 37–55. [PMID: 28668996](#)
809. Husak, V.V., Mosiichuk, N.M., Kubrak, O.I., Matviishyn, T.M., Storey, J.M., Storey, K.B. and Lushchak, V.I. 2018. Acute exposure to copper induces variable intensity oxidative stress in goldfish tissues. *Fish Physiol. Biochem.* Epub Feb 20. [PMID: 29464406](#)
808. Semaniuk, U., Feden'ko, K., Yurkevych, I.S., Storey, K.B., Simpson, S.J. and Lushchak, O.V. 2018. Within-diet variation in rates of macronutrient consumption and reproduction do not accompany changes in lifespan in *Drosophila melanogaster*. *Entomologia Experimentalis et Applicata*, 166, 74-80.
807. Stancic, A., Jankovic, A., Korac, A., Cirovic, D., Otasevic, V., Storey, K.B. and Korac, B. 2018. A lesson from the oxidative metabolism of hibernator heart: possible strategy for cardioprotection. *Comp. Biochem. Physiol. B*, 5, 219-220. [PMID: 29501789](#).
806. Zhang, J.Y., Zhang, L.-P., Yu, D.-N., Storey, K.B. and Zheng, R.Q. 2018. Complete mitochondrial genomes of *Nanorana taihangnica* and *N. yunnanensis* (Anura: Dicroglossidae) with novel gene arrangements and phylogenetic relationship of Dicroglossidae. *BMC Evol. Biol.* 18(1) 26. [PMID: 29486721](#)
805. Cai, Y.-T., Ma, L., Xu, C.-J., Li, P., Zhang, J.-Y., Storey, K.B. and Yu, D.-N. 2018. The complete mitochondrial genome of the hybrid of *Hoplobatrachus chinensis* (♀) × *H. rugulosus* (♂) and its phylogeny. *Mito. DNA Part B: Resources.* 3(1), 344-345. doi.org/10.1080/23802359.2018.1450661
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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.

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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
RECENT LECTURES AND CONFERENCE PRESENTATIONS

CAREER SUMMARY

Plenary, Keynote and Named Lectures:	65
Conference Scientific Committees	5
Symposia Organized	30
Invited Lectures in Symposia at Scientific Meetings	110
Invited Seminars (universities, research stations, public lectures)	398
Contributed Communications with Students at Scientific Meetings	564

PLENARY LECTURES, KEYNOTE ADDRESSES & NAMED LECTURES: 2007 – Present

- 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, 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 21st century. 1st International Conference on Oxidative Stress in Aquatic Ecosystems. Los Cabos, Mexico, November 20-24, 2012.
- Metabolic mechanisms of mammalian hibernation. Keynote speaker, 14th 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, 50th annual Canadian Society of Zoologists, University of Ottawa, May 16-20, 2011.
- Frozen alive: Molecular mechanisms of vertebrate freeze tolerance. Keynote lecture, 11th Extreme Cryo meeting, Edmonton, Alberta, January 29-30, 2010.
- Life in the cold: a biochemist's perspective on animals in winter. Keynote lecture, 39th Annual meeting, German Ecological Society, Bayreuth, Germany, September 14-18, 2009.
- Life in the cold: molecular mechanisms of mammalian hibernation. Keynote lecture, 34th 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. 25th 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. 17th 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:

- International Congress of Comparative Physiology and Biochemistry, 10th meeting, Ottawa, Ontario, August 5-9, 2019.
- Society for Cryobiology, 44th Annual Meeting, 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. 13th 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

- 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. 115th 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. 53rd 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 Eutheria. 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. 7th International Symposium on Heat Shock Proteins in Biology and Medicine, Washington, DC. November 1-5, 2014.
- Metabolic rate depression: the heart in winter. 2nd Cardiovascular Forum for Promoting Centers of Excellence and Young Investigators. Winnipeg, MB, September 4-6, 2014.
- Oxidative stress and the marine environment - "radical" management. 8th 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. 3rd 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 21st 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 21st century. CRYO2013, 50th Annual Meeting, Society for Cryobiology, Bethesda, Maryland, July 28-31, 2013.
- Metabolic depression: from the intertide to the open ocean. 1st International Conference on Oxidative Stress in Aquatic Ecosystems. Los Cabos, Mexico, November 20-24, 2012.
- Biochemical adaptation to freezing environments. 26th 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! 6th Canadian Oxidative Stress Conference, Winnipeg, Manitoba, May 7-10, 2009.
- Beyond gene chips: transcription factor profiling in freeze tolerance. 13th 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. 5th meeting, Canadian Oxidative Stress Consortium, Montreal, PQ, May 3-6 2007.

**INVITED SEMINARS: UNIVERSITIES, RESEARCH STATIONS & PUBLIC LECTURES:
2011 - Present**

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.

The living dead: metabolic arrest and survival strategies in the marine environment. Evenings at Whitney, Whitney Laboratory for Marine Bioscience, St. Augustine, FL. February 9, 2017.

The living dead: metabolic arrest and the control of biological time. 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: metabolic arrest and the control of biological time. 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: 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.