

MARVA IRENE SWEENEY-NIXON
Curriculum Vitae

Personal Information

Date of birth: May 19th, 1964.
Place of birth: Halifax, Nova Scotia, Canada.
Address: Department of Biology, University of Prince Edward Island, Charlottetown, PE, Canada.

Post-secondary Education

1981-1984 B. Sc. (major in Chemistry, minor in Biology), Mount Allison University, Sackville, NB.
1984-1986 M. Sc. (Pharmacology), Dalhousie University, Halifax, NS. Thesis title: "*Role of adenosine in the spinal antinociceptive effects of morphine and noradrenaline*".
1987-1989 Ph. D. (Neuropharmacology), Dalhousie University, Halifax, NS. Thesis title: "*Release of adenosine and adenine nucleotides from the spinal cord: role in nociception*".

Work Experience

1987-1989 Coordinator of a correspondence course in Pharmacology to Certified Nursing Assistants, Henson College, Halifax.
1989-1992 Post-doctoral Research Fellow with Prof. A.C. Dolphin, Depts. of Pharmacology, St. George's Hospital & Royal Free Hospital Schools of Medicine, University of London, England, UK.
1993 - 1997 Assistant Professor (with term), Dept. of Physiology, University of Saskatchewan, Saskatoon, SK.
1993 - 1997 Principal Investigator and Member of the Saskatchewan Stroke Research Center, Royal University Hospital, Saskatoon, SK.
1997-2003 Assistant Professor, Department of Biology, University of Prince Edward Island, Charlottetown, PE. **Tenure** awarded in July 2002.
1998-2001 Adjunct Professor, Department of Anatomy & Physiology, University of Prince Edward Island, Charlottetown, PE.
2003-present Associate Professor, Department of Biology, University of Prince Edward Island, Charlottetown, PE.

Personal Awards

- 1981-1984 Undergraduate Scholarship, Mt. Allison University.
- 1981-1983 Undergraduate Scholarship, Nova Scotia Department of Education.
- 1984-1989 Graduate Studentship, Dalhousie University.
- April 1989 Fidia Young Scientist Travel Award to attend the International Society for Neurochemistry biennial meeting in Portugal.
- 1990-1993 Post-doctoral Research Fellowship, Medical Research Council of Canada.
- August 1993 Fidia Young Scientist Travel Award to attend the International Society for Neurochemistry biennial meeting in France.
- July 2005 Research Professorship from the Levesque Foundation (2006-2009).

University Teaching

- 1988-1989 Dalhousie University, Pharmacology 345 -**Clinical Pharmacology**, 2 lectures: Opioid narcotics; non-steroidal anti-inflammatory drugs.
- 1990-1991 Royal Free Hospital School of Medicine, London, UK. Tutor in Neuropharmacology to Medical students: 6 hours.
- 1992-1993 University of Saskatchewan, Physiology 429.3/829.3 - **Physiology of the Nervous system**, 4 lectures: Neurotransmitters and synaptic transmission.
- 1993-1994 University of Saskatchewan, Physiology 212.6 - **Human Physiology** (for Arts & Science, Physical Education and Nursing students), 36 lectures: Cell physiology; nervous physiology; muscle physiology; exercise physiology.
- 1994-1995 University of Saskatchewan, Physiology 202.9 - **Human Physiology** (for Medical & Dental students), 8 lectures: Physiology of the nervous system.
- University of Saskatchewan, Physiology 349.3/829.3 - **Neurophysiology**, 12 lectures: Neurotransmitters; synaptic transmission; nervous system plasticity.
- University of Saskatchewan, Physiology 334.6 - **Experimental Basis of Physiology**, 16 hours of laboratories: Frog neuromuscular junction lab; human motor lab; human special senses lab.
- 1995-1996 University of Saskatchewan, Physiology 202.9 - **Human Physiology** (for Medical & Dental students), 32 lectures: Physiological principles; physiology of the cell; nervous system physiology; muscle physiology; exercise physiology; cardiovascular physiology and endocrinology.

University of Saskatchewan, Physiology 334.6 - **Experimental Basis of Physiology**, 12 hours of laboratories: Frog neuromuscular junction lab; human special senses lab.

University of Saskatchewan, Physiology 432.6 - **Physiological Research**. Honors Coordinator.

University of Saskatchewan, Physiology 898.3 - **Special Topics in Physiology: Neuron-glia interactions - physiology and pathophysiology**. 39 hours of journal clubs and lectures to Graduate students.

- 1996-1997 University of Saskatchewan, Physiology 349.3/829.3 - **Neurophysiology**, 14 lectures: Brain microenvironment; neurotransmitters and synaptic transmission; plasticity in the nervous system; physiological transducers. Class Co-ordinator.
- University of Saskatchewan, Physiology 202.9 - **Human Physiology (for Medical & Dental students)**, 14 lectures: Central nervous system physiology.
- 1997-2003 University of Prince Edward Island, Biology 102- **Human Biology** (entire course: science and critical thinking; human health and homeostasis; organization of the human body; cells: division, heredity, genes, genetic engineering, growth, cancer; organ systems: digestive, circulatory, immune, respiratory, excretory, nervous, endocrine & reproduction, pregnancy, birth).
- 1997-2003 University of Prince Edward Island, Biology 221- **Cell Physiology** (entire course: cellular fluids; cell membranes, walls and surfaces; organelles/compartments; the extracellular matrix; energy flow; gene expression; cell motility, muscle contraction, signal transduction; cell development; cell evolution; special topics (nerve, immune and cancer cells).
- 1997-present University of Prince Edward Island, Biology 402- **Animal Physiology** (entire course: Physiologic principles; Systems: nervous, endocrine, circulatory, & alimentary; Integration of systems: gas exchange, ionic and osmotic balance, thermoregulation; Adaptation: dormancy and hibernation, altitudes, pregnancy).
- 1999-2003 University of Prince Edward Island, Biology 121- **Human Anatomy & Physiology I** (entire course: anatomy history and language, organization of human systems, origin of life, characteristics of life, general chemistry, organic chemistry, cell biology (cell structure, nucleus and DNA, cell division, energy production), structure and function of the integumentary, skeletal, muscular and nervous systems.
- University of Prince Edward Island, Biology 122- **Human Anatomy & Physiology II** (entire course: Endocrine systems, male and female reproductive systems, conception and fetal development, pregnancy and parturition, circulatory systems, body defense, the urinary system, body fluid, electrolyte and pH balance.)
- 1999-present University of Prince Edward Island, Biology 441A/401- **Human Physiology & Pathophysiology** (entire course: Homeostasis and disease; the nervous system and

nervous disorders; endocrine system and disorders; Heart physiology and EKG, blood pressure; lung physiology; cardio-pulmonary physiology and exercise; CV pathologies and risk factors; lung diseases; blood, anemia; hemophilia, immune responses, AIDS; digestion and GI disease; energy balance and metabolism, diabetes and obesity; urine production; fluid and electrolyte balance; acid-base balance; renal disease; bed wetting; reproduction and contraception, pregnancy, parturition, growth and aging).

University of Prince Edward Island, Atlantic Veterinary College, Veterinary Anatomy & Physiology 852- **Introduction to Neuroscience** (1 module): Synaptic transmission; neurotransmitters; pain processing.

- 2003-2006 University of Prince Edward Island, Veterinary Biomedical Sciences/Biology 232 - **Introduction to Pharmacology for Nursing Students** (entire course: pharmacokinetics and pharmacodynamics of the major classes of drugs [antibiotics, endocrine, NSAIDs, CNS, cardiovascular, respiratory, g.i., cancer, immunizations], regulations concerning drug use, special considerations for drug use in geriatric and pediatric patients, drug use in public health and emergency situations, and over-the-counter medications, non-pharmacological ways to manage disease).
- 2005, 2006 Biology 441 (Directed Studies in Biology).
- 2005-present University of Prince Edward Island, Biology 326 - **General Physiology** (entire course: Physiological principles; Cell physiology [transport across membranes, signalling, regulation of gene expression and the cell cycle]; Animal Physiology [animal cells & tissues, control systems, cardiopulmonary systems, renal & digestive systems]; Plant physiology [plant cells & tissues, photosynthesis, water and solute transport, plant nutrition and signalling]).

Participation in Teaching Workshops

- January 1993 Active **participant** in a workshop entitled “A guide to evaluating students and grading at the University of Saskatchewan”, organized by the Instructional Development Program, University of Saskatchewan (2 hours).
- March 1993 Active **participant** in the Teaching Improvement Project Systems (TIPS) Faculty Development Workshop for Faculty in the College of Medicine, held in Saskatoon (2½ days). Title: “Effective Teaching Techniques”.
- March 1995 Active **participant** in Spring Teaching Days, organized by the Instructional Development Program, University of Saskatchewan (6 hours). Titles: (1) “Use of a textbook in the classroom”; (2) “Teaching students with disabilities”; (3) “The BAER essentials - a problem-based cooperative learning exercise”; (4) “How to achieve an effective group discussion class”; (5) “Writing (and rewriting) to make sense”.
- October 1995 **Observer/Facilitator-in-training** for TIPS Faculty Development Workshop, College of Medicine, held in Regina (2½ days). Title: “Effective Teaching Techniques”.
- February 1996 **Facilitator** for TIPS Faculty Development Workshop, College of Medicine, held in Saskatoon (2½ days). Title: “Effective Teaching Techniques”.
- March 1997 Active **participant** in Spring Teaching Days, organized by the Instructional Development Program, University of Saskatchewan (2 hours). Title: “Awkward moments in teaching:

how would you handle that ?”.

- April 1997 Active **participant** in Faculty Development Workshop, College of Medicine, University of Saskatchewan (4 hours). Title: “*Active Learning Strategies*”.
- June 1997 Active **participant** in Faculty Development Workshop, College of Medicine, University of Saskatchewan (4 hours). Title: “*How am I teaching ?*”.
- August 1998 **Facilitator** for TIPS Faculty Development Workshop, College of Medicine, held in Saskatoon (2½ days). Title: “*Effective Teaching Techniques*”.
- October 1998 Active **participant** in the 2nd Annual UPEI Teaching Symposium entitled “*The Learner-Centred Classroom*”, Charlottetown, PEI (1 day). Acted as **Chair** of a session entitled “*Transferability and applicability of skills in the learner-centred classroom*” (2hr session).
- September 2002 Active **participant** in the Atlantic Canada Teaching Showcase, held at UPEI , Charlottetown, PEI (1 day).
- September 2003 Active **participant** in the UPEI Talking Teaching Day, Charlottetown, PEI (1 day).
- September 2006 Active **participant** in the UPEI Talking Teaching Day, Charlottetown, PEI (1 day).

Graduate Students Supervised

- 1999-2002 Mr. D.S. Campbell (**M.Sc.**). Supervised a Master of Science thesis in the Dept. of Biology, UPEI entitled: “*Neuroprotective preconditioning by cyclopentyladenosine (CPA), an adenosine analog, against cerebral ischemia-induced damage.*”
- Ms. S. Rigley (**M.Sc.**) Co-supervised a Master of Science thesis in the Dept. of Anatomy and Physiology, UPEI entitled: “*Effect of adenosine A1 agonists on apoptosis and necrosis in cultured neurons after simulated ischemia.*”
- 2001-2004 Ms C. Dunsford (**M.Sc.**) Co-supervised a Master of Science thesis in the Dept. of Biology, UPEI entitled: “*Effects of lowbush blueberry extract consumption on atherosclerosis in hypercholesterolemic rabbits.*”
- 2005-present Ms G. Murphy-Walsh (**M.Sc.**) Co-supervise a Master of Science thesis in the Dept. of Biology, UPEI entitled: “*Effects of lowbush blueberry consumption on human biomarkers of cardiovascular disease.*”
- 2007-present Mr. A. Scanlan (**M.Sc.**) Co-supervise a Master of Science thesis in the Dept. of Biology, UPEI entitled: “*Effects of Vaccinium berries on the hypertensive stroke-prone rat.*”

Undergraduate Students Supervised

- 1991-1992 Mr. M. Silver (**B.Sc.**). Dept. of Pharmacology, Royal Free Hospital School of Medicine, London. Title: “*Biochemical interactions between G-proteins and Ca²⁺ channels in cultured neurons*”.
- 1994-1995 Ms. M. Logan (**B.Sc. Honors, summer research**). Dept. of Physiology, University of Saskatchewan. Title: “*Mechanisms for the protective effect of adenosine against simulated ischemia-induced death of cultured brain cells*”.

- May-August 1995 Ms. A. Murton (**summer research**). Dept. of Physiology, University of Saskatchewan. Title: “Does dipyridamole cross the blood brain barrier?”.
Mr. N. Soni (**summer research**). Dept. of Physiology, University of Saskatchewan. Project title: “A non-clinical study to determine possible reasons for the lack of effect of Persantine® in ischemic stroke”.
- 1995-1996 Ms. P. Holden (**B.Sc. Honors**). Dept. of Physiology, University of Saskatchewan. Title: “The role of Ca²⁺ in neuronal and astrocytic cell death following ischemia in vitro and in vivo”.
Ms. C. Fournier (**B.Sc. Honors**, Co-supervision). Dept. of Physiology, University of Saskatchewan. Title: “An in vivo evaluation of the effects of organophosphate pesticides on coagulation screening tests”.
- May-August 1996 Ms. A. Murton (**summer research**). Dept. of Physiology, University of Saskatchewan. Title: “Can pretreatment with adenosine prevent later stroke-induced brain damage ?”.
Mr. S. Hood (**summer research**, co-supervision). Dept. of Physiology, University of Saskatchewan. Title: “An in vivo evaluation of the effects of organophosphate pesticides on coagulation screening tests”.
- May-August 1997 Mr. S. Hood (**summer research**). Dept. of Physiology, University of Saskatchewan. Title: “Effect of adenosine receptors on apoptosis”.
Ms. M. Shabatoski (**summer research**, co-supervision). Depts. of Physiology & Pharmacology, University of Saskatchewan. Title: “Effect of intravenous malathion on coagulation screening tests in vivo and in vitro”.
- 1998 - 1999 Ms. R. Morrell (**B.Sc. Honors, summer research**). Dept. of Biology, UPEI. Title: “Effects of chronic dietary caffeine on stroke outcome in rats”.
Mr. D.S. Campbell (**B.Sc. Honors, summer research**). Dept. of Biology, UPEI. Title: “Effects of acute administration of cyclopentyladenosine (CPA) 24 hours before cerebral hypoxia-ischemia on nerve cell death in the rat hippocampus”.
Ms. S. Rigley (**Senior Undergraduate Research Project, summer research**). Dept. of Biology, UPEI. Title: “Effects of estrogen administration to male rats on neuronal damage after brain trauma”.
Ms. S. Conolly (**B.Sc. Honors**, co-supervision). Dept. of Biology, UPEI. Title: “Development of an injectable sustained release formulation of buprenorphine in chitosan-based gel”.
Mr. T. Gallant (**B.Sc. Honors**, co-supervision). Dept. of Biology, UPEI. Title: “Morphometric analysis of PCB 118-induced ultrastructural alterations in the rat liver”.
- 1999-2000 Ms. M. Forgeron (**B.Sc. Honors**). Dept. of Biology, UPEI. Title: “The effects of chronic dietary caffeine and cerebral ischemia on working memory in the Mongolian gerbil.”.
Ms. M. Miller (**Senior Undergraduate Research Project**). Dept. of Biology, UPEI. Title: “The protective effects of estrogen on cultured granule neurons following an ischemic event”.
- 1999-2000 Ms. C. Deacon (**B.Sc. Honors**, co-supervision). Co-supervised her Honors research project in the Dept. of Biology, UPEI. Title: “Estrogen release in the parabrachial nucleus

and plasma response to vagal afferent stimulation”.

- 2000-2001 Mr. D. Blacquiere (**B.Sc. Honors**). Dept. of Biology, UPEI. Title: “*The effects of short term intakes of dietary flavonoids from blueberries and black tea on stroke outcome in male rats.*”
- 2001-2002 Ms. K.J. Clark (**B.Sc. Honors**). Dept. of Biology, UPEI. Title: “*The effects of individual fractions of Vaccinium angustifolium on primary cultured neurons after simulated ischemic stroke and oxidative stress.*”
Mr. N.V. Gaudet (**B.Sc. Honors**). Dept. of Biology, UPEI. Title: “*The effects of individual fractions of Vaccinium angustifolium on simulated ischemic stroke and insulin sensitivity in vivo.*”
Ms. M. Oley (**Senior Undergraduate Research Project**). Dept. of Biology, UPEI. Title: “*An evaluation of blueberry juice administered orally to rats on blood lipids and insulin sensitivity*”.
- 2002-2003 Mr. F. Soloman (**B.Sc. Honors**). Dept. of Biology, UPEI. Title: “*The effects of individual fractions of cranberries Vaccinium macrocarpon on simulated ischemic stroke and oxidative stress in vitro.*”
Mr. M. Matchett (**B.Sc. Honors**). Dept. of Biology, UPEI. Title: “*The effects of individual fractions of Vaccinium angustifolium on MMP expression in cultured prostate cancer cells.*”
- 2003-2004 Mr. N. Manning (**B.Sc. Honors**). Dept. of Biology, UPEI. Title: “*The effects of partially purified fractions of Vaccinium angustifolium on brain damage after stroke: time and dose-dependence.*”
- 2004-2005 Mr. J. Patrick Curley (**B.Sc. Honors**). Dept. of Biology, UPEI. Title: “*The impact of blueberry extract on hypertension, blood glucose and lipid levels, and inflammation in spontaneously hypertensive rats.*”
- 2006-2007 Ms. Emily Xu (**B.Sc. Honors**). Dept. of Biology, UPEI. Title: “*Evaluation of the bioactive effects of metabolites of polyphenols on oxidatively-stressed neurons*”.
- Rachel
- Jamie
- 2007-2008 Jennifer MacKinnon
- Matthew Morrison
- 2008- Ian Boswall

Technicians and Post Doctoral Fellows Supervised

1994-1997	Mr. D. Arneson, Dept of Physiology, Faculty of Medicine, University of Saskatchewan.
2003-2005	Mr F. Soloman, Dept of Biology, University of Prince Edward Island.
2004-2005	Ms S. Morrison, Dept of Biology, University of Prince Edward Island. Ms N. Farbstein, Dept of Pharmacology, Dalhousie University.
2005-2006	Ms J. Irving, Dept of Biology, University of Prince Edward Island.
2006-present	Mr Kevin Shaughnessy, Dept of Biology, University of Prince Edward Island. Dr. Jennifer Slemmer, Dept of Biology, University of Prince Edward Island. Ms J. Livingstone, Dept of Biology, University of Prince Edward Island.

Research Grants

1993-1994	Biomedical Establishment Grant, Health Services Utilization and Research Commission of Saskatchewan. Title: " <i>Regulation of adenosine transport by G-proteins</i> ". \$23,000. Equipment Grant, Scientific Teaching and Research Fund, College of Medicine, University of Saskatchewan. Title: " <i>The effect of ischemia on adenosine receptors and adenosine transport in cultured neurons</i> ". \$3,500.
1994-1996	Operating Grant, Heart & Stroke Foundation of Saskatchewan. Title: " <i>Effect of ischemia on adenosine receptors in cultured neurons</i> ". \$88,000.
July 1994	Equipment Grant, Health Services Utilization and Research Commission of Saskatchewan. \$7,000.
March 1995	Research Grant, Medical Research Foundation of Saskatchewan. Title: " <i>A non-clinical study to determine possible reasons for the lack of effect of Persantine® in ischemic stroke</i> ". \$10,000.
1996-1998	Operating Grant, Heart & Stroke Foundation of Saskatchewan. Title: " <i>Mechanism for adenosine-mediated protection against neuronal death</i> ". \$104,000.
December 1997	Research Grant, Senate Committee on Research, UPEI. Title: " <i>Cellular and molecular changes induced by adenosine</i> ". \$ 2,000.
March 1998	Research Grant, Senate Committee on Research, UPEI. Title: " <i>An evaluation of preconditioning effects of adenosine and caffeine in rat brains in vivo</i> ". \$4,990.00
1998-2001	Operating Grant, Heart & Stroke Foundation of PEI. Title: " <i>Cellular and molecular changes induced by adenosine</i> ". \$162,500.
May 2000	Research Grant, Senate Committee on Research, UPEI. Title: " <i>Do dietary wild blueberries lower the risk of cardiovascular disease ?</i> ". \$12, 000.

- May 2001 Research Grant, Senate Committee on Research, UPEI. Title: "*Effects of antioxidant-rich fractions of wild blueberries on oxidative stress in nerve cells.*". \$5,625.
- 2001-2006 Discovery Grant, Natural Sciences and Engineering Research Council. Title: "*Distribution, metabolism and action of polyphenols isolated from wild blueberries.*". \$172,800. **Co-applicants:** Dr. Gottschall-Pass K.T. (**PI**), Dept of Family & Nutritional Sciences, UPEI, ; Dr. B.H.J.Juurlink, Dept of Anatomy & Cell Biology, University of Saskatchewan.
- 2002 Equipment Grant, Natural Sciences and Engineering Research Council. Title: "*Upright - 86°C freezer for storage of biological material.*". **Co-applicants:** Dr. C. Lacroix (**PI**) and Dr. R.Hurta, Dept of Biology, UPEI. \$12,321.
- 2002-2003 Principal Investigator on an Operating Grant from the PEI Cancer Research Council, Cancer Research Development Fund. Title: "*Effect of bioactive compounds, isolated from lowbush ('wild') blueberries, on cancerous tumor cell growth and destruction.*" **Co-applicants:** Dr. R.Hurta, Dept of Biology, UPEI; Dr. Gottschall-Pass K.T. , Dept of Family & Nutritional Sciences, UPEI, Charlottetown PE. \$4150.
- 2002-2003 Collaborator on an Operating Grant from the PEI Cancer Research Council, Cancer Research Development Fund. Title: "*Chemopreventive properties of blueberry bioactives: roles in regulation of tumor cell proliferation-linked genes.*" **Co-applicants:** Dr. R.Hurta, Dept of Biology, UPEI Dr. Gottschall-Pass K.T. , Dept of Family & Nutritional Sciences, UPEI, Charlottetown PE. \$3800.
- 2002-2004 Collaborator on an Operating Grant from the University of Massachusetts (Dartmouth) Cranberry Agricultural Research Program. Title: "*Tumor Inhibitors and Neuroprotective Antioxidants from Cranberry.*". **Co-applicants:** Dr. C. Neto, S. Mac Kinnon, R. Hurta. \$10,000 USD
- 2006-2008 Discovery Grant, Natural Sciences and Engineering Research Council. Title: "*Distribution and action of polyphenols isolated from Vaccinium spp.*". \$42,328. **Co-applicant:** Dr. Gottschall-Pass K.T. (**PI**), Dept of Family & Nutritional Sciences, UPEI.

Research Contracts

- 2000-2001 Agriculture & Agri-Foods Canada, Research Investment Fund. Title: "*Effect of dietary wild blueberries on stroke outcomes and anti-oxidant status.*". \$12,000. **Co-applicants:** Dr. K.T. Gottschall-Pass, Dept of Family & Nutritional Sciences, UPEI, Charlottetown PE; Dr. W. Kalt, Food and Horticulture Research Station, Agriculture and Agri-Foods Canada, Kentville NS.
- June 2003-June 2005 The Stewart and Lynda Resnick Revocable Trust, 11444 West Olympic Boulevard, 10th Floor, Los Angeles, CA 90064. Title: "Effect of roll beverage on stroke outcomes in rats". \$20,292 USD.
- 2002-2007 Collaborator on a contract from the Atlantic Innovation Fund. Title: **Atlantic Canada Network on Bioactive Compounds.** **Co-applicants:** Drs Gordon, Gottschall-Pass,

Nelson, Kemp, MacKinnon, Kalt, Percival, Smith, Skinner, and Nicholls. \$2.7M total value; \$50,000/year (my share).

2004-2009 Collaborator on a contract from the Atlantic Innovation Fund. Title: **Bioresource Innovation. Co-applicants:** Drs, Gottschall-Pass, Nelson, Hurta, MacKinnon, Robertson. \$6.1M total value; \$100,000/year (my share).

University Committees Served & Administrative duties

Policy Committees

1993-1994 Graduate Affairs Committee, Dept. of Physiology, Univ of Saskatchewan.
1994-1996 Space, Facilities and Personnel Committee, Dept. of Physiology, University of Saskatchewan.
Fall 1995 Curriculum Planning Group 5: "Teaching & Evaluation Methods (including problem-based learning)", Working group for the Curriculum Sub-Committee, Undergraduate Education & Student Affairs, College of Medicine, University of Saskatchewan.
1995-1996 Executive of Faculty, College of Medicine, University of Saskatchewan.
1996-1997 Undergraduate Affairs Committee, Dept. of Physiology, Univ of Saskatchewan.
1997-1999 Senate Committee on the Enhancement of Teaching and Learning, UPEI.
Jan-April 1999 Co-chair of a Faculty of Science Committee to develop a proposal for an MSc. Program in Biology & Chemistry, UPEI.
1999-2000 Faculty of Science Graduate Studies Committee.
2007- PhD, Faculty of Science

Decision-making Committees

1994-1997 Awards Committee, College of Graduate Studies & Research, University of Saskatchewan.
1997-2003 Animal Care Committee, UPEI.
May 2006-present University Review Committee, Faculty of Science Representative.
2007- ACCBR management Committee

Advisory committees

April 2003 Mentor in the PEI Health Research Institute (HRI) Research Development Fellowship course.
Jan-June 2003 Advisory Committee for Canada Research Chairs in Neuroscience and Bioresources, UPEI.
2003 Advisory Committee for establishment of the National Research Council (NRC) Institute of Nutrisciences and Health (INH), UPEI.
2003 Laboratory and Research Animals User Group, Federal Infrastructure Project, AVC.
2003-2005 Sexual Harassment Committee, UPEI.
2005-present Fair Treatment Committee

Search Committees

1993-1994 Departmental head, Dept. of Physiology, Univ of Saskatchewan.
Jan-April 2000 Tenured faculty position, Dept of Psychology, UPEI.
Feb-May 2002 Lab Animal Veterinarian, UPEI.

May 2003, March 2008 Sabbatical leave replacement, Department of Chemistry, UPEI.
 Aug-Sept 2006 Research Chair in Schizophrenia, Biology, UPEI.
 Aug-Dec 2006 CRC in Biophysics, ORD, UPEI.
 October 2007 NSERC UFA, Department of Biology UPEI.
 Dean of Arts, UPEI.
 Dec 2007-April 2008 Chemistry

Student Committees

1995-1997 Advisory Committee for Mr. L. Bekar, M. Sc. student, Dept. of Physiology, University of Saskatchewan.
 Advisory Committee and External Examiner for Ms. N. Afridi, B. Sc. (Med.) student, Dept. of Anatomy, University of Saskatchewan.
 April 1996 M. Sc. Thesis External Examiner, Mr. S. Thorbourne, Dept. of Anatomy, University of Saskatchewan.
 March 1997 B. Sc. (Med.) Thesis External Examiner, Mr. G. Matthew, Dept. of Anatomy, University of Saskatchewan.
 August 2001 Ph.D. Thesis External Examiner, Ms. H. Marrif, Dept. of Pharmacology, University of Saskatchewan.
 2002-2003 PhD Advisory Committee and PhD. Examination Committee for Ms. T. Doucette, Department of Biomedical Sciences, UPEI.
 2002-present MSc/PhD Advisory Committee for Mr. P. Bernard, Departments of Psychology and Biomedical Sciences, UPEI.
 July 2003 M. Sc. Thesis Examining Committee, Ms K. Gormley, Dept of Biology, UPEI.
 2003-2005 MSc Advisory Committee, Mr. K. Langdon, Departments of Psychology and Biomedical Sciences, UPEI.
 MSc Advisory Committee, Mr. M. Matchett, Department of Biology, UPEI.
 MSc Advisory Committee, Ms. C. Jardine, Department of Biology, UPEI.
 2005-2007 Melissa Burt
 2005-present MSc Advisory Committee, Mr. E. Francis, Department of Biology, UPEI.
 MSc Advisory Committee, Ms. G. Murphy-Walsh, Department of Biology, UPEI.
 May 2006 Ph.D. Thesis Examining Committee for Dr. N. Kashemsant, Dept of Biomedical Sciences, UPEI.
 June 2006 Oral Comprehensive Examination Committee for Charlene Supnet, Dept of Biomedical Sciences, UPEI.
 August 2006 MSc Examining Committee for K. Crosby, Dept of Biomedical Sciences, UPEI.
 2006-present PhD Advisory Committee for Daphne Gill, Dept of Biomedical Sciences, UPEI.
 Jan 2007-present MSc Advisory Committee, Mr. A. Scanlan, Department of Biology, UPEI.
 MSc Advisory Committee, Ms. A. Adams, Department of Biology, UPEI.
 August 2007 Oral Comprehensive Examination Committee for Dirk Lutchman, Dept of Biomedical Sciences, UPEI.

Other administrative duties

2004-2006 University Marshal, UPEI and Member of Convocation Committee.
 May 2006-present UPEIFA Communications Committee.
 June 2006-present Chair, UPEI Convocation Committee.

Professional Committee Activity Outside the University

1996- 1997	Biomedical Review Committee for research grants, Health Services Utilization and Research Commission of Saskatchewan.
1998-2001	Scientific Review Committee III (for research grants), Heart and Stroke Foundation of Canada.
1996-present	Pharmacological Society of Canada Representative on the Canadian Federation of Biological Societies (CFBS) Equal Opportunity Committee.
2000-present	UPEI representative, Atlantic Provinces Council on the Sciences (APICS) Animal Care Committee.
2004	CIHR Institute for Aging, Pilot Grants Program, Grant Review Committee.

Invited Presentations & Public Awareness

October 1990	American Pain Society Annual Meeting, St. Louis, MO. Title: " <i>Preparations used to study adenosine release from the spinal cord</i> ".
April 1994	Dept. of Veterinary Physiological Sciences, Western College of Veterinary Medicine, University of Saskatchewan. Title: " <i>Adenosine as a neuromodulator in the central nervous system: therapeutic implications in analgesia and stroke</i> ".
September 1994	Dept. of Anatomy, University of Saskatchewan. Title: " <i>Protective effect of adenosine against cell damage in an <u>in vitro</u> stroke model</i> ".
June 1995	Saskatchewan Stroke Research Center Symposium " Cellular mechanisms involved in cerebral ischemia ", Saskatoon. Title: " <i>Endogenous adenosine: the good, the bad, and the ugly</i> ".
October 1995	Dept. of Pharmacology, Dalhousie University, Halifax. Title: " <i>Endogenous adenosine in cerebral ischemia: the good, the bad, and the ugly</i> ".
April 1996	Dept. of Pharmacology, University of Saskatchewan, Saskatoon. Title: " <i>Neuroprotective effects of adenosine in cerebral ischemia: therapeutic window of opportunity</i> ".
August 1996	Dept. of Anatomy, University of Saskatchewan, Saskatoon. Title: " <i>Adenosine: endogenous protector of ischemia-induced delayed neuronal death</i> ".
June 1997	Dept. of Biology, UPEI. Seminar title: " <i>Neurobiological roles for adenosine: friend or foe?</i> " Lecture title: " <u>The Physiology of Hibernation</u> ".
July 1998	Dept. of Anatomy & Physiology, Atlantic Veterinary College, UPEI. Title: " <i>Adenosine in the CNS: therapeutic implications in analgesia and stroke</i> ".

- November 1998 Faculty of Science seminar series, UPEI. Title: "*The wonders of adenosine in the brain: relevance to strokes, coffee drinkers and diving turtles.*"
- April 1999 University of Prince Edward Island Research Breakfast. Title: "*The importance of stroke research: is chronic caffeine drinking a good preventative strategy ?*".
- June 1999 Rotary Club of Charlottetown, Invited Speaker. Title "*Stroke prevention*".
- November 1999 Dept. of Biology, St. Francis Xavier University, Antigonish NS. Title: "*The wonders of adenosine in the brain: relevance to strokes, coffee drinkers and diving turtles.*"
- February 2000 Heart & Stroke Foundation of PEI, **Launch of Heart Month**, Tim Hortons Restaurant, Summerside PEI. Title: "*Preserving our nerve cells in stroke*".
- March 2001 Dept. of Biology, University of New Brunswick, Fredericton NB. Title: "*Protecting neurons from hypoxia: are blueberries the answer ?*".
- August 2001 Dept. of Pharmacology, University of Saskatchewan, Saskatoon SK. Title: "*Preventing cardiovascular disease: are dietary blueberries the answer ?*".
- May 2002 PEI Health Research Institute Forum, Brudenell PEI. Title: "*Effects of individual fractions of lowbush blueberries on cultured neurons after simulated stroke and oxidative stress*".
- December 2002 CBC's *Quirks and Quarks* radio show. Title: *Is there colour vision in mammals ?*
- May 2003 PEI Health Research Institute Forum, Crowbush Resort, PEI. Title: "*Antioxidant rich fractions from cranberries reduce neuronal death in response to simulated stroke and reperfusion in vitro.*".
- October 2003 Dept. of Biology, Mt Allison University, Sackville NB. Title: "Effects of *Vaccinium* phytochemicals on cardiovascular health."
- June 2004 Pom Wonderful Health Summit, Los Angeles, CA. Title: "Evaluation of the neuroprotective effects of pomegranate juice on simulated ischemic stroke in rats."
- September 2004 Nova Scotia Biotechnology and Life Sciences Industry Association (BioPort Nova 2004), Halifax, NS. Title: "Building the Bio-Economy in Atlantic Canada".
- December 2004 PEI-WISE (Women in Science & Engineering), UPEI. Title: "Studying the Health Benefits of Berries: Lessons in WiSE. What/Why/How to Survive and Stay Encouraged & Excited".
- October 2005 Canadian Herb, Spice & Natural Health Products Coalition, National Conference 2005, St. John's, Newfoundland. Title: "Connecting Agriculture to Health". Talk entitled "Blueberries - more than just antioxidants".
- November 2005 New Brunswick Horticulture Congress 2005, Moncton, NB. Title: "The power of blue: the science of health effects of wild blueberries".

- February 2007 PEI Health Research Institute “Lunch & learn” series. Title: “Getting Healthy With Berries”.
- November 2007 Dept. Of Chemistry & Biochemistry, University of Massachusetts (at Dartmouth). Title: “*Berries: Interdisciplinary Approaches to Evaluating Healthy Foods* .”
- March 2008 Atlantic Cranberry Management Course, Charlottetown PEI. Title: “*Cranberries – an update on health effects*”.
- April 2008 Sanofi-Aventis BioTalent Challenge, Biotech Luncheon, Charlottetown PEI. Title: “*Biosciences @ UPEI*”.

Involvement in Symposium Organization

- June 1995 Member of the organizing committee for a satellite symposium at the Canadian Federation of Biological Societies (CFBS) Annual Meeting, Saskatoon. Symposium entitled : “*Cellular mechanisms involved in cerebral ischemia*”.
- Sept 2007-Jan 2008 WCBR Panel

Professional Memberships

- 1985-1989 American Society for Neuroscience, Student member.
- 1989-present American Society for Neuroscience, Regular member.
- 1988-1993 International Society for Neurochemistry, Junior member.
- 1993-present International Society for Neurochemistry, Ordinary member.
- 1994-present Pharmacological Society of Canada, Regular member.

MARVA IRENE SWEENEY-NIXON
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I. Refereed manuscripts:

1. Sawynok J., **Sweeney M.I.** and White T.D.. Classification of adenosine receptors mediating antinociception in the rat spinal cord. *Br. J. Pharmacol.* **88**: 923-930, 1986.
2. **Sweeney M.I.** and Sawynok J.. Evidence that substance P may be a modulator rather than a transmitter of noxious mechanical stimulation. *Can. J. Physiol. Pharmacol.* **64**: 1324-1327, 1986.
3. **Sweeney M.I.**, White T.D., K.H. Jhamandas and Sawynok J.. Morphine releases endogenous adenosine from the spinal cord in vivo. *Eur. J. Pharmacol.* **141**: 169-170, 1987.
4. **Sweeney M.I.**, White T.D. and Sawynok J.. Involvement of adenosine in the spinal antinociceptive effects of morphine and noradrenaline. *J. Pharmacol. Exp. Ther.* **243**: 657-665, 1987.
5. **Sweeney M.I.**, White T. and Sawynok J.. 5-Hydroxytryptamine releases adenosine from primary afferent nerve terminals in the spinal cord. *Brain Res.* **462**: 346-349, 1988.
6. **Sweeney M.I.**, White T.D. and Sawynok J.. Morphine, capsaicin and K⁺ release purines from capsaicin-sensitive nerve terminals in the spinal cord. *J. Pharmacol. Exp. Ther.* **248**: 447-454, 1989.
7. Sawynok J., **Sweeney M.I.**¹ and White T.D.. Adenosine release may mediate spinal analgesia by morphine. *Trends in Pharmacol. Sci.* **10**: 186-189, 1989.
8. Sawynok J. and **Sweeney M.I.**¹. The role of purines in nociception. *Neurosci.* **32**: 557-569, 1989.
9. **Sweeney M.I.**, White T.D. and Sawynok J.. 5-Hydroxytryptamine releases adenosine and cyclic AMP from primary afferent nerve terminals in the spinal cord in vivo. *Brain Res.* **528**: 55-61, 1990.
10. Sawynok J., **Sweeney M.**, Nicholson D. and White T.D.. Pertussis toxin inhibits morphine-induced adenosine release from the spinal cord. *Prog. Clin. Biol. Res.* **328**: 397-400, 1990.
11. **Sweeney M.I.**, White T.D. and Sawynok J.. Intracerebroventricular morphine releases adenosine and adenosine 3',5'-cyclic monophosphate from the spinal cord via a serotonergic mechanism. *J. Pharmacol. Exp. Ther.* **259**: 1013-1018, 1991.
12. Scott R.H., **Sweeney M.I.**, Kobrinisky E.M., Pearson H.A., Timms G.H., Pullar I.A., Wedley S. and Dolphin A.C.. Actions of arginine polyamine on voltage and ligand-activated whole cell currents recorded from cultured neurones. *Br. J. Pharmacol.* **106**: 199-207, 1992.
13. **Sweeney M.I.** and Dolphin A.C.. 1,4-Dihydropyridines modulate GTP hydrolysis by G_o in neuronal membranes. *FEBS Lett.* **310**: 66-70, 1992.

¹These reviews were written by my PhD supervisor (Sawynok), using my doctoral data and other data from the lab.

14. Huston E., Cullen G., **Sweeney M.I.**, Pearson H., Fazel M.S. and Dolphin A.C.. Pertussis toxin treatment increases glutamate release and dihydropyridine binding sites in cultured rat cerebellar granule neurons. *Neurosci.* **52**: 787-798, 1993.
15. **Sweeney M.I.**, White T.D. and Sawynok J.. Morphine-evoked release of adenosine from the spinal cord occurs via a nucleoside carrier with differential sensitivity to dipyridamole and nitrobenzylthioinosine. *Brain Res.* **614**: 301-307, 1993.
16. **Sweeney M.I.** and Dolphin A.C.. Adenosine A1 agonists and the Ca²⁺ channel agonist Bay K 8644 produce a synergistic stimulation of the GTPase activity of G_o in rat frontal cortical membranes. *J. Neurochem.* **64**: 2034-2042, 1995.
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24. **Sweeney M.I.**, Kalt W., MacKinnon S.L., Ashby J. and Gottschall-Pass K.T. Feeding of diets enriched in lowbush blueberries (*Vaccinium angustifolium*) for six weeks decreases stroke severity in rats. *Nutritional Neuroscience* **5**: 427-431, 2002.
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cranberry fruit (*vaccinium macrocarpon*) that inhibit tumor cell growth and matrix metalloproteinase expression *in vitro*. *J. Sci. Food Agric.* **86**: 18-25, 2006 [Epub Oct 17, 2005].

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II. Book chapters and expositions, refereed:

1. Sawynok J., Nicholson D.J., **Sweeney M.I.** and White T.D.. Adenosine release by morphine and spinal antinociception: role of G proteins and cyclic AMP. *NIDA Res. Monogr.* **105**: 40-46, 1991.
2. Dolphin A.C., Huston E., Pearson H., Menon-Johansson A., **Sweeney M.I.**, Adams M.E. and Scott R.H.. G protein modulation of calcium entry and transmitter release. *Annals N.Y. Acad. Sci.* **635**: 139-152, 1991.
3. Dolphin A.C., Menon-Johansson A., Campbell V., Berrow N. and **Sweeney M.I.**. Modulation of voltage-dependent calcium channels by GABA_B receptors and G-proteins in cultured rat dorsal root ganglion neurons: relevance to transmitter release and its modulation. In ***Cellular mechanisms of sensory processing: The somatosensory system***. (L. Urban, ed.), Springer-Verlag, Heidelberg. pp. 47-61, 1994.
4. **Sweeney M.I.**. Measurement of the GTPase activity of signal-transducing G-proteins in neuronal membranes. In ***Methods in Molecular Biology, Vol. 41: Signal Transduction Protocols*** (D.A.Kendall & S.J. Hill, eds.), Humana Press, New Jersey. pp. 51-61, 1995.
5. **Sweeney M.I.** Adenosine A1 receptors inhibit necrosis and apoptosis induced by oxygen and glucose deprivation in cultured neurons. *Annals of the NY Academy of Sciences Conference* entitled "**Oxidative/Energy metabolism in neurodegenerative disorders**" 2000.
6. Neto, C. C., **Sweeney-Nixon, M. I.**, Lamoureaux, T. L., Soloman, F, Kondo, M., MacKinnon, S. L. Cranberry phenolics: Effects on oxidative processes, neuron cell death and tumor cell growth. In *Phenolic Compounds in Foods and Natural Health Products*, American Chemical Society Symposium Series **909** (Shahidi F. and Ho C.-T., eds), pp. 271-282, 2005.
7. **Sweeney, M.I.** Pomegranate juice consumption reduces simulated ischemic stroke damage and increases brain antioxidant status in rats. In "*Pomegranate: Ancient Roots to Modern Medicine*", (N. Seeram, R. Schulman and D. Heber, eds.), CRC Press, pp. 91-106, 2006.

III. Manuscripts submitted:

Shaughnessy K.S., Boswall, I.A., Scanlan A.P., Gottschall-Pass K.T. and **Sweeney, M. I.** Blueberry diets lower blood pressure in spontaneously hypertensive stroke-prone rats. Submitted to Nutrition Research (July 2008, manuscript# 08-126).

IV. Abstracts and conference presentations:

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2. **Sweeney M.I.**, White T.D. and Sawynok J.. Involvement of adenosine in the analgesic effect of morphine and noradrenaline in the spinal cord. *Soc. Neurosci. Abstracts* **12**: 1018, 1986.
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6. **Sweeney M.I.**, White T.D. and Sawynok J.. Morphine-evoked release of adenosine from the spinal cord occurs via a dipyridamole-sensitive carrier. *J. Neurochem. (Suppl.)* **52**: S99B, 1989.
7. **Sweeney M.I.**, White T.D. and Sawynok J.. Adenosine, but not its phosphorylated nucleotides, is released from the spinal cord via a dipyridamole-sensitive carrier. In **Adenosine Receptors in the Nervous System**, ed. J.A. Ribeiro, Taylor and Francis (London): 213, 1989.
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14. **Sweeney M.I.**. Activation of adenosine receptors protects neurons from ischemia-induced death. *Soc. Neurosci. Abstracts* **20**: 1042, 1994.
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23. **Sweeney M.I.**, K.J. Clark, S. MacKinnon, W. Kalt and K.T. Gottschall-Pass. The effects of individual fractions of lowbush (wild) blueberries (*Vaccinium angustifolium*) on primary cultured neurons after simulated ischemic stroke and oxidative stress. PEI Health Research Institute Forum (May 2002).
24. **Sweeney M.I.**, Rigley S.T., Campbell D.S. and Tasker R.A.R. A1-adenosine receptor activation several hours before stroke decreases necrotic and apoptotic death in vitro and in vivo. *Soc. Neurosci. Abstracts* **28**: 2002.
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26. **Sweeney M.I.**, Soloman F. and Neto, C.C. Antioxidant rich fractions isolated from cranberries reduce neuronal death in response to simulated ischemic stroke and reperfusion injury in vitro. *Proceedings of the Can. Fed. Biol. Soc.* 46: 92, 2003.
27. **Sweeney M.I.**, Gottschall-Pass, K.T., Clark, K.J. and Durant, C. Anthocyanins Isolated from Lowbush Blueberries (*Vaccinium Angustifolium*) Inhibit Oxidative Stress-induced Nitrite Accumulation and NOS Induction in Cultured Cerebellar Granule Neurons. (Presented at *Experimental Biology '04*, Washington, DC) 2004.
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Experimental Biology '05, San Diego, CA), 2005.

30. **M. Sweeney**, K. Shaughnessy, K. Gottschall-Pass. Blueberry diets delay the onset of hypertension and reduce insulin resistance in spontaneously hypertensive stroke prone rats. *FASEB J.* 21(6): A1092, 2007.
31. K. Shaughnessy, **M. Sweeney**, and C. Neto . Investigation of the effects of cranberry fractions on atherosclerosis in mice. *FASEB J.* 21(6): A1093, 2007.
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