

## Joanne Alison Fox

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Teaching Portfolio: <http://joannealisonfox.com/>  
AMBL Website: <http://www.bioteach.ubc.ca/>  
MSL Faculty Website: <http://www.michaelsmith.ubc.ca/faculty/fox/>

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### Education:

2002 Ph.D. Genetics, University of British Columbia.  
2003 Bioinformatics: Writing Software for Genome Research, Cold Spring Harbor Laboratories.  
2002 Certificate in Bioinformatics, University of British Columbia.  
1997 B.Sc. Biochemistry, Simon Fraser University.

### Funded Grants and Proposals:

2010-2008 NSERC PromoScience Program, Natural Sciences and Engineering Research Council of Canada, **AMBL Science Outreach Programs at the Michael Smith Laboratories**, Principal Applicant, \$7000 per year 2008, 2009, 2010  
2009-2008 Teaching and Learning Enhancement Fund, University of British Columbia, **TERRY TALKS – INTERDISCIPLINARY STUDENT JAM – Ideas that Inspire Action**, Co-Principal Applicant, \$38,000  
2009-2008 Teaching and Learning Enhancement Fund, University of British Columbia, **University of British Columbia International Genetically Engineered Machines (iGEM) team**, Co-Principal Applicant, \$36,816.80  
2006-2005 Teaching and Learning Enhancement Fund, University of British Columbia, **Applied Workshops in Bioinformatics – Introducing Bioinformatics Earlier in Undergraduate Education at UBC**, Principal Applicant, \$17,775  
2005-2004 Teaching and Learning Enhancement Fund, University of British Columbia, **Applied Workshops in Bioinformatics – Enabling Students to Use Bioinformatics**, Co-Principal Applicant, \$20,000  
2005 AMS Innovative Project Fund, University of British Columbia, **Accessing Genome Information Using the Web – Hosting the Ensembl HelpDesk Workshop for Students at UBC**, Principal Applicant, \$2000  
2004 AMS Innovative Project Fund, University of British Columbia, **Hosting the NCBI Training Course in Bioinformatics at UBC**, Principal Applicant, \$1200

### Scholarships and Awards:

2006 Teaching Portfolio Competition Award, Centre for Teaching & Academic Growth, University of British Columbia  
2002 Canadian Institutes of Health Research Institute of Genetics, IG Short-Term Exchange Program  
2002, 2001 Alberta Heritage Foundation for Medical Research, Post-Graduate Fellowship  
2000, 1999, 1998, 1997 Natural Sciences and Engineering Research Council, Post-Graduate Fellowship  
1995 Natural Sciences and Engineering Research Council, Industrial Research Award.  
1995-1992 Simon Fraser University, Shrum Entrance Scholarship

**Publications:****Referred Papers:**

Brazas MD, **Fox JA**, Brown T, McMillan S, Ouellette BF. (2008) Keeping pace with the data: 2008 update on the Bioinformatics Links Directory. *Nucleic Acids Research* **36**:W2-4.

**Fox JA**, McMillan S, Ouellette BF. (2007) Conducting research on the web: 2007 update for the bioinformatics links directory. *Nucleic Acids Research* **35**:W3-5.

**Fox JA**, McMillan S, Campbell G, Ouellette BFF. (2006) A Compilation of Molecular Biology Web Servers: 2006 Update on the Bioinformatics Links Directory. *Nucleic Acids Research* **34**:W3-5.

Marshall C, **Fox JA**, Butland S, Ouellette BFF, Brinkman F, Tibbits G. (2005). Phylogeny of Na<sup>+</sup>-Ca<sup>2+</sup> Exchanger (NCX) genes from genomic data identifies new gene duplications and a new family member in fish species. *Physiological Genomics* **21**:161-73.

**Fox JA**, Butland SL, McMillan S, Campbell G, Ouellette BFF. (2005) The Bioinformatics Links Directory: a compilation of molecular biology web servers. *Nucleic Acids Research* **33**:W3-W24.

**Fox JA**, Ung K, Tanlimco SG, Jirik FR. (2002). Disruption of a single *Pten* allele augments the chemotactic response of B-lymphocytes to stromal cell derived factor-1 (SDF-1). *Journal of Immunology* **169**: 49-54.

Andrew SE, Reitmair AH, **Fox J**, Hsiao L, Francis A, McKinnon M, Mak TW, Jirik FR. (1997). Base transitions dominate the mutational spectrum of a transgenic reporter gene in MSH2 deficient mice. *Oncogene* **15**: 123-129.

Andrew SE, Pownall S, **Fox J**, Hsiao L, Hambleton J, Penney JE, Kohler SW, Jirik FR. (1996). A novel LacI transgenic mutation-detection system and its application to establish baseline mutation frequencies in the scid mouse. *Mutation Research* **357**: 57-66.

**Magazine Articles:**

Jon Nakane, Keddie Brown, Peter Danielson, **Joanne Fox**, Yas Shirazu, Donna Lee, Esther Abd-Elmessih, and David Ng. (2006) Home Molecular Genetics *MAKE:07: Backyard Biology* page 65

**Abstracts:**

Shah SP, He DYM, Sawkins J, Druce J, Quon G, Baluta D, Lett D, Zheng G, Xu T, **Fox JA**, Ouellette BFF (2004). Pegasys: Software for the analysis of large sets of biological sequences. Genome Informatics. Cold Spring Harbor Laboratories, USA.

Marshall CR, **Fox JA**, Butland SL, Ouellette BFF, Le HD, Hnatowich M, Hryshko LV, Tibbits GF (2004). Temperature Dependence of the Na<sup>+</sup>-Ca<sup>+</sup> Exchanger (NCX); Combining Functional and Bioinformatics Approaches. Biophysical Society 48<sup>th</sup> Annual Meeting. Baltimore, USA.

**Fox JA**, Butland S, McMillan S, Campbell G, Ouellette BFF. Bioinformatics Core Facility: New Resources for CGDN Scientists. Canadian Genetic Diseases Network Annual Scientific Meeting, Collingwood, ON (CAN), May 27 - 30, 2004.

**Fox JA**, Butland S, McMillan S, Ouellette BFF. UBC Bioinformatics Centre: New Resources for CGDN Scientists. Canadian Genetic Diseases Network Annual Scientific Meeting, Kananaskis, AB (CAN), May 15 - 18, 2003.

**Fox J**, Ung K, Jirik FR. (2001). Disruption of a single *Pten* allele enhances the chemotactic response of B cells to stromal cell derived factor-1 (SDF-1). 11<sup>th</sup> International Conference on Second Messengers and Phosphoproteins. Melbourne, Australia.

**Fox J**, Zhang J, Matusik RJ, Jirik FR. (2000). Generating mice with prostate specific expression of Cre recombinase. HGM2000, The Human Genome Organization Annual General Meeting. Vancouver, Canada.

**Fox J**, Matusik RJ, Jirik FR. (1999). Generating Mice with Prostate Specific Expression of Cre Recombinase. Canadian Genetic Diseases Network, Annual General Meeting. Toronto, Canada.

**Fox J**, Jirik FR. (1997) The development and utility of animal models in the Prostate Cancer Research Initiative. National Cancer Institute of Canada, Prostate Cancer Research Initiative Planning Workshop. Vancouver, Canada.

Andrew SE, Reitmair AH, **Fox J**, Hsiao L, Mak TW, Jirik FR. (1996). Analysis of spontaneous mutations in MSH2 'knock-out' mice using a transgenic mutation detection system. *Am. J. Hum. Genet.* **59** Suppl; A264

Andrew SE, Reitmair AH, **Fox J**, Hsiao L, Mak TW, Jirik FR. (1996). Analysis of spontaneous mutations in MSH2 'knockout' mice using a transgenic mutation detection system. Gordon Conference – Mutagenesis. Plymouth, USA.

**Fox J**, Andrew SE, Hsiao L, Hambleton J, Reitmair AH, Jirik FR. (1996). Analysis of spontaneous mutations in MSH2 knockout mice using a transgenic mutation detection system. Transgenic Animals in Mutation Research, EMS Satellite Meeting. Victoria, Canada.

Hsiao L, Andrew SE, **Fox J**, Hambleton J, Jirik FR. (1996). Mutagenicity of menadione on rat embryonic fibroblasts using a selectable assay. Transgenic Animals in Mutation Research, EMS Satellite Meeting. Victoria, Canada.

Andrew SE, Reitmair AH, **Fox J**, Hsiao L, Mak TW, Jirik FR. (1996). Analysis of spontaneous mutations in MSH2 'knockout' mice using a transgenic mutation detection system. Gordon Conference on DNA mutation. USA.

**Teaching Experience:**

2008, 2007, 2006, 2005  
Fall Semesters

Instructor, MICB405: Bioinformatics, Microbiology & Immunology, University of British Columbia, enrollment 60, 4<sup>th</sup> yr, lecture + computer lab based.

*MICB405: Bioinformatics introduces students to the concepts and applications of bioinformatics research across several broad topic areas including: sequence data and databases; sequence similarity throughout evolution; genomic and protein structural information; and network approaches to 'systems' biology. From a biological perspective, the main considerations and applications of the computational tools used in each of these subject areas are discussed. Lecture materials are supplemented by in-class activities, self-assessed assignments, and final project where small groups of students apply their skills to answer a self-directed research question. As the primary instructor for this, I initiated two-years of curricula development and review (2005-2006), funded by the Teaching and Learning Enhancement Fund (TLEF), which resulted in the incorporation of new hands-on computer lab experiences. Recent curricula development initiatives, in collaboration with co-instructor Dr. Michael Murphy, have focused on incorporating opportunities for authentic undergraduate research experiences for students as part of this course.*

2009, 2008  
Spring Semesters

Instructor, ASIC200: Global Issues in the Arts and Sciences, University of British Columbia, enrollment 90, 2<sup>nd</sup> yr, lecture + PBL based.

*ASIC 200 Global Issues in the Arts and Sciences: Selected global issues explored through the methodologies and perspectives of both the physical and life sciences and the humanities and social sciences. ASIC, arts and sciences integrated course, is a new course designation at UBC created for this interdisciplinary course. ASIC 200 represents the teaching aspect of my leadership role in the Terry\* project. The Terry\* project is a joint initiative of the University of British Columbia's Faculties of Arts and Science (as well as many others including those from groups as diverse as UBC Student Development and UBC Community Affairs). Its primary mission is to educate members of the UBC community (notably undergraduate students) on the pressing global issues of our time. As one of three faculty members for ASIC 200 (one from Arts, two from Sciences), I'm actively involved in curriculum development and in facilitating the problem based learning (PBL) sessions.*

2006 – ongoing  
Feb 2006, Feb 2005,  
Feb. 2004, Feb 2003,  
May 2003

Core Faculty Member, Canadian Bioinformatics Workshop Series  
Lead Instructor, Bioinformatics Workshop, enrollment 50+, diverse audiences, hands-on workshop based.

*Leadership role coordinating the bioinformatics workshops, developing and delivering lecture and lab materials. This two week intensive professional development workshop established itself as the starting point for hands-on instruction in the use of software tools for genomic and computational biology research in Canada. These workshops are offered across Canada, have trained over 800 individuals, and are accredited by the University of British Columbia, the University of Toronto, and the University of New Brunswick.*

Feb. 2002, April 2002,  
May 2001, Aug 2000

Instructor for Bioinformatics/Proteomics Workshops, Canadian Bioinformatics Workshop Series.

1999

*PBL Tutor for UBC medical students, Department of Medicine, University of British Columbia.*

1999 & 1998

*Teaching Assistant, Department of Genetics, University of British Columbia.*

2000 & 1999  
2001 - 1995  
2000  
1995 - 1993

*Manager, National Junior Team, Athletics Canada.*

*Head Coach, Racewalk West Track and Field Club.*

*Coach, Joints in Motion Marathon Training Program, Arthritis Society.*

*Tutor, Simon Fraser Athletics, Simon Fraser University*

*For a more detailed description of my teaching experiences, please refer to my teaching portfolio online at:*  
<http://www.joannealisonfox.com/>

**Work Experience:**

July 2007 – present

Instructor, Michael Smith Laboratories, University of British Columbia

*As a faculty member with Advanced Molecular Biology Laboratory (AMBL), the educational facilities of the Michael Smith Laboratories, I'm involved in a wide variety of outreach programs that range from science education initiatives, to high school field trip programs, to interdisciplinary projects that bridge the Arts and the Sciences. At the University, I contribute to undergraduate teaching in the Departments of Microbiology and Immunology (MICB405: Bioinformatics) and in the Faculty of Arts and Sciences (ASIC200: Global Issues in the Arts and Sciences). I also lecture in courses from Medical Genetics, Pathology, Food Nutrition and Health, Biology, as well as in the professional development workshops hosted by AMBL. Annually, I organize two major science education conferences, one aimed at high school teacher professional development and the other for high school students. I'm also actively involved in our popular field trip programs, which have garnered a strong reputation for excellence. With our broad mandate of engaging audiences with Science, my role at AMBL often involves very creative and collaborative projects. For example, I'm one of four faculty and staff members involved in leading the Terry\* project on campus, a joint initiative of the University of British Columbia's Faculties of Arts and Science*

June 2007 - Jan. 2003

Head of Support and Training, Research Associate, UBC Bioinformatics Centre, University of British Columbia

*This teaching and leadership role involved developing and delivering bioinformatics user support, education, and training initiatives at the centre, leading bioinformatics curricula development projects, contributing to management of centre, and supervising bioinformatics research projects.*

Nov. 2002 - Sept. 1997

Ph.D. Genetics, University of British Columbia &amp; University of Calgary

*Supervised by Dr. Frank Jirik, with expertise in fields of genetics, immunology, molecular & cellular biology, and biochemistry. Thesis title: Disruption of a single Pten allele augments the chemotactic response of B-lymphocytes to stromal cell derived factor-1 (SDF-1)*

Aug. 1997 - Apr. 1997

BC Cancer Agency, University of British Columbia

*Supervised by Dr. Frank Jirik, research project funded by BC Breast Cancer Initiative investigating the molecular mechanisms of DNA damage in an in vivo cancer model system.*

Mar. 1997 - Sept. 1996

De Novo Enzyme Corporation, Simon Fraser University

*Supervised by Dr. Thor Borgford, worked on establishing and maintaining a system for in vitro protein expression.*

Aug. 1996 - Apr. 1996

Merck Frosst Centre for Therapeutic Research

*Supervised by Dr. Sophie Roy, worked in the Biochemistry and Molecular Biology Department on BAX family of proteins involved in the regulation of apoptosis.*

Apr. 1996 – Sept. 1995.

Biomedical Research Center, University of British Columbia

*Supervised by Dr. Frank Jirik, worked with a lambda phage based transgenic model to study DNA mutation in DNA repair deficient backgrounds.*

**References:**

Available upon request.

Resume last updated February 2009.