Joanne Alison Fox

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AMBL Website: http://www.bioteach.ubc.ca/
MSL Faculty Website: http://www.michaelsmith.ubc.ca/faculty/fox/

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*

2010 Teaching and Learning Enhancement Fund, University of British Columbia, **UBC MIX Project – Creating Interdisciplinary Connections in Classrooms at UBC**, Principal Applicant, *$16,650*

2010 Teaching and Learning Enhancement Fund, University of British Columbia, **TEDx TERRY TALKS AND TERRY TALES – INTERDISCIPLINARY STUDENT JAM – Ideas that Inspire Action**, Co-Principal Applicant, *$27,500*

2010 Teaching and Learning Enhancement Fund, University of British Columbia, **University of British Columbia International Genetically Engineered Machines (iGEM) team**, Co-Principal Applicant, *$10,266.40*

2010 Teaching and Learning Enhancement Fund, University of British Columbia, **Building a Sustainable Let's Talk Science Partnership Program**, Co-Applicant, *$12,750*

2009 Teaching and Learning Enhancement Fund, University of British Columbia, **TERRY TALKS – INTERDISCIPLINARY STUDENT JAM – Ideas that Inspire Action**, Co-Principal Applicant, *$38,000*

2009 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 Teaching and Learning Enhancement Fund, **Applied Workshops in Bioinformatics – Introducing Bioinformatics Earlier in Undergraduate Education at UBC**, Principal Applicant, *$17,775*

2005 Teaching and Learning Enhancement Fund, **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:

2009 ASM/UNESCO Visiting Resource Person (VRP) Program, award in support of visit to Nigerian Institute for Oceanography and Marine Research, Lagos, Nigeria

2009 American Society for Microbiology, Early Career Travel Award, ASM Conference for Undergraduate Educators

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 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^{+}-Ca^{2+} 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 and Invited Lectures:

Fox JA Invited Keynote, Humbolt-Kolleg-Osogbo International Conference on Biotechnology: Trends in the Advancement of Life Science Research and Development in Nigeria, Bioinformatics in Life Sciences Research, August 2009, Ada, Nigeria.

Fox JA Invited Speaker, Nigerian Institute for Oceanography and Marine Research, Bioinformatics in Life Sciences Research, August 2009, Lagos, Nigeria.

Fox JA Invited Speaker, 16th Annual ASM Conference for Undergraduate Educators, Tools for Bringing Bioinformatics into Your Undergraduate Classrooms, May 2009, Fort Collins, USA.

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 Dependance of the Na+-Ca+ Exchanger (NCX); Combining Functional and Bioinformatics Approaches. Biophysical Society 48th 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). 11th 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:

2010 Summer, Fall Semester	Course Coordinator, Curricula Development, Instructor for SCIE113: First Year Seminar in Science, University of British Columbia, enrollment 8 sections 25 students, 1st year, seminar based writing intensive course. *SCIE113 First-Year Seminar in Science offers a small-group experience where students study science in society, scientific process, and how to communicate scientific concepts. In this new course, first-year students in the Faculty of Science will work closely with a faculty member to explore science as a way of knowing and science in society. This course will act as an alternative to one first-year ENGL course and will, in part, satisfy the communication requirement for science students. As course coordinator, I coordinate timetabling, supervise the teaching assistants, manage course package distribution & the course website, and coordinate guest speakers for the Science and Society speaker series. As part of the curricula team, I am currently developing the course package including daily lesson plans; readings and course material; and, learning objectives and assessments. The first offering of this course is scheduled for Fall 2010, and with this pilot I will help coordinate educational research efforts to evaluate effectiveness. In addition to these roles, I will act as primary instructor for one of the sections in the Fall 2010 offering.*
2009, 2008, 2007, 2006, 2005 Fall Semesters	Instructor for MICB405: Bioinformatics, Microbiology & Immunology, University of British Columbia, enrollment 60, 4th 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 authentic undergraduate research experiences for students as part of this course.*
2010 Fall Semester	Instructor for PATH547/BIOL437/BOTA544/FRST503/PLNT540: Laboratory in Molecular Biology, University of British Columbia, enrollment 24, 4th yr, laboratory course. *PATH547:Laboratory in Molecular Biology covers the use of molecular biology techniques to explore biological problems and provides students with a chance to explore these techniques in a hands-on laboratory setting. As the instructor for this course, I provide students with both the practical and theoretical frameworks for successfully carrying out standard molecular biology techniques including DNA isolation, cloning & PCR, protein expression methods, and RNA work. This course setting involves a full day of instruction (in various forms ranging from lectures, demonstrations, games, data analysis etc.) that is integrated into the hands-on experimental work carried out by students in the Advanced Molecular Biology Labs. Experimental materials/preparations are carried out with help from the AMBL technician.*

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

Teaching Experience (continued):

2009, 2008 Spring Semesters	Instructor for ASIC200: Global Issues in the Arts and Sciences, University of British Columbia, enrollment 90, 2nd 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.*
2010, 2009, 2008	Guest Lecturer, Across Different Faculties/Departments at University of British Columbia, 4th yr and grad, varied class sizes and formats. *Examples of credit courses at UBC for which I deliver recurring guest lectures (from year-to-year) include: FNH436: Integrated Functional Genomics; FNH439: Laboratory in Integrated Functional Genomics; MEDG421: Genetics and Cell Biology of Cancer; LIBR534: Health Information Sources and Services; STAT547: Special Topics in Statistics; FOOD527: Special Topics in Food Sciences*
Ongoing (Core Faculty since 2006) 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, enrollment 50+, diverse audiences, hands-on workshop based.
1999	*PBL Tutor for UBC medical students*, Department of Medicine, University of British Columbia, enrollment 10, seminar based.
1999 & 1998	*Teaching Assistant*, Department of Genetics, University of British Columbia, enrollment 200+, tutorial based.
2000 & 1999	*Manager*, National Junior Team, Athletics Canada.
2001 - 1995	*Head Coach*, Racewalk West Track and Field Club.
2000	*Coach*, Joints in Motion Marathon Training Program, Arthritis Society.
1995 - 1993	*Tutor*, Simon Fraser Athletics, Simon Fraser University

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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), for the Faculty of Science (SCIE113:First Year Seminar in Science), in a cross listed course (PATH547/BIOL437/BOTA544/FRST503/PLNT540: Laboratory in Molecular Biology), 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. I am also project lead for the UBC MIX project aimed at creating interdisciplinary connections in courses at UBC.*

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

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 protein 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 July 2010.