Jamie Cassels Undergraduate Research Awards, 2009-2010 – Student Abstracts

Dean Ashton, Pacific & Asian Studies Supervisor has a considerable collection of Chinese posters, most dating from the latter part of the Cultural Revolution and the immediate post-Mao years (approx. 1973-83). While the collection includes examples of well-known works, there are also posters which have not appeared in the standard collections or online archives. These have never been catalogued or copied, and are in deteriorating condition owing to the poor quality of the paper they were printed on and a combination of mailing, moving, and storage. Supervisor has long wanted to preserve and share this archive; earlier this year he discussed digitizing a portion of the collection with Stewart Arneil, Martin Holmes, and Greg Newton, who have worked with Claire Carlin on a digitization project involving early modern French etchings. Application for an internal SSHRC grant to begin this work was planned, but not completed. Student and supervisor will select a set of images (tentatively 50-60 posters) from the collection to be photographed or otherwise reproduced digitally, then catalogued and displayed online. Before the final selection is made, student will review the academic literature on this art-form (and perhaps comparable work from the Soviet Union and other socialist states) and the available online collections, to ensure that examples from the collection not contained elsewhere are included in the new archive. The current intention is to focus on works from the late Cultural Revolution period. Student intends to pursue graduate studies on China, possibly within the discipline of cultural anthropology; this would be a useful component in his training for this, exposing him to archive material which was designed to sway public opinion and guide social practice. The project will also allow him to work on his language skills, and teach him (and his supervisor) new technical skills. Student will be involved in the selection and cataloguing of posters, and the design of the online display; he will be responsible for the digitization of the images. He will conduct a review of scholarly literature and the online resources. He will write his undergraduate honours paper on the collection. Choice of the exact topic of the paper should wait until this research project is underway; the posters could be looked at as works of art, as historical artifacts, or from the perspective of comparison with other political propaganda. There will certainly be more than enough material for a 499 research paper.

Jonathan Bell, School of Exercise Science, Physical & Health Education Jon's research experience has had him conducting a series of experiments in the Krigolson Laboratory Group aimed at examining the contributions of the dorsal and ventral visual streams to movement target localization. To examine the neural activity associated with target localization, electroencephalographic data was collected while participants made reaching movements to a series to target locations. Learning Objectives: a) gain
experience in experimental design b) further his knowledge of electroencephalographic data collection c) further his knowledge of electroencephalographic data analysis d) expose Jon to poster and manuscript preparation e) provide Jon with the opportunity to present his data at an international scientific meeting. As outlined in the learning objectives, Jon's role was that of the principal investigator. He was responsible for contributing to and testing the experimental design, data collection, data analysis, and presentation of the results. Admittedly, supervising faculty guided him through this process, however, the onus was on him to complete the research projects.

**Sabrina Buzzalino, Women's Studies** Nature of the proposed research collection: data collection, literature review, and interviews for a project on globalization, democratization, and gender and human rights.

Learning objectives: Student will become familiar with the literature in the area as well as learn how to write a literature a review, will learn data collection methods and statistical methodology, and gain experience in interviewing and transcription of interviews.

Role of Student: the student will have several roles: she will update an existing dataset on women’s human rights indicators, help run and interpret statistical tests on the data; do research on emerging literature in the area of globalization, democratization, and gender and human rights; conduct interviews with local organizations who work in these areas, transcription of interviews; aid in manuscript preparation.

**Rachel Caulfield, Psychology** Proposed Research Experience: Cortex (www.uvic.ca/psyc/cortex) is a lab at the Department of Psychology with a main focus: the study of executive functions and prefrontal cortex development in clinical populations. Rachel will have the opportunity to participate in an ongoing research experience involving volumetric analysis of prefrontal cortex gray and white matter in a clinical sample of children from Spain that have diagnosed with Attention Deficit Hyperactivity Disorder (ADHD). This study involves manual tracing on digitalized 1.5 millimetre thick, non-overlapping, continuous sagittal slices within the Prefrontal Cortex. This is done using Analyze 9.0 software, developed by Mayo Clinic. Although is a very time consuming technique, manual tracing will allow us to isolate cortical thickness and volume, and identify main differences between the ADHD and the control group. These differences could be measured not only at the gross brain morphological level but in relation to specific prefrontal cortex areas largely associated with this syndrome. Rachel spent the academic year 2008-2009 participating in our lab research as a volunteer, and given her outstanding performance in the lab activities, I admitted her as a Honours student for this current academic year. An award such as the Undergraduate Research Scholarship would allow her to invest more time in the volumetric analysis, taking her honours thesis to the next level and turning it into
a publishable achievement. Learning Objectives: a) To become fully familiar with the most relevant literature in ADHD, as demonstrated by a oral presentation to the lab mates during a scheduled lab meeting.

b) To master neuroimaging manual tracing using Analyze software, demonstrating knowledge of neuroanatomical landmarks in the prefrontal cortex.

c) To identify the neuroanatomical correlates of ADHD, demonstrating knowledge of the meaningful relationship between cortical subareas of the prefrontal cortex and behaviours associated with ADHD.

d) To learn about conceptualization of a research project from its conception to the statistical analysis and interpretation of results. Role in Research Project: a) Rachel will complement the basic tracing analysis involved in her developing honours thesis project (Hemispheric, Total, and Prefrontal Cortex volumes) with a secondary layer of analysis involving the segmentation of gray and white matter within the prefrontal cortex (data collection stage). This secondary analysis is highly time consuming, yet it will take Rachel’s research to a potentially publishable level.

b) Undertaking this primary and secondary level of data analysis, Rachel will have plenty of opportunities to apply the statistical knowledge that she will be acquiring in her two honours-level stats courses (data analysis stage).

c) As an active and promising psychology student, Rachel will be exposed to literature and lab discussions regarding the clinical (behavioural and neuropsychological) features of ADHD; moreover, she will be able to work with graduate students, visiting scholars, and other undergraduate peers working on parallel projects studying the role of the prefrontal cortex in a diverse number of clinical and non-clinical samples (e.g., children with dyslexia, normal cognitive ageing) (knowledge transfer stage).

**Ross Churchley, Mathematics & Statistics** The student will be involved in original research in graph theory. He will study the structure of polar claw-free graphs and try to find an efficient recognition algorithm for this class of graphs. I hope that the student will learn some basic techniques in designing algorithms, gain a fair amount of research experience, and be able to successfully share his experience/results with others.

**Liam Cross, Chemistry** Design and construction of a broadband, mid-infrared Mueller-Matrix Ellipsometer. Experience in optics, data acquisition, modelling. Initial construction, calibration experiments, analyze data, write report, possible publications.

**Jordan Czop, Child & Youth Care** The Ministry of Children and Family Development (MCFD) has longitudinal, time series data on all families in BC who
have received child welfare services. Since 1999, there is a strong upward trend in Offers of Support Services (OSP) as a response to intakes. Currently, OSP is the second most common response after investigation to any type of intake. It would be useful for MCFD to know what is driving this trend, for example, is it limited to certain regions or sub-regions, non-Aboriginal families, age groups, specific types of concerns, and it would be useful to know if the same types of families who formerly were investigated are now receiving offers of support services. The students will be co-supervised by Dr. Doug Magnuson and Daljit Dhadwal of MCFD. They will learn how to use a spreadsheet to analyze and interpret data.

Julius Davies, Computer Science  Nature of the Proposed Research: One of the most important characteristics of Free and Open Source Software (FOSS) projects is the license under which they are made available to its users. The license of each of these projects will determine how this component can be reused by other FOSS projects and by industry.

Debian, the GNU/Linux distribution, is composed of more than 12,000 different FOSS components that interact with each other to create an integrated environment. It is not uncommon for components that are working together to have different licenses.

The same occurs inside each of these components. They are usually a collection of many different source code files, each having its own license. Sometimes all files in a component have the same license, in others, a component might contain files under different licenses.

We recently developed a tool for the automatic identification of licenses in source code [1]. The project assigned to Julius is to inspect the FOSS components in Debian that contain files with different licenses, and understand how these licenses interact with each other (and potentially find some inconsistencies within them).

Julius will also compare the results of the detected licenses in the source code files of a component with the license of the component as stated by its authors or maintainers. Finally, he will also inspect how component with different licenses interact within Debian.

I expect that the results of this project will provide an empirical evaluation of a system of patterns that we recently developed [2] and a better understanding of how the FOSS licenses interact with each other.

Learning Objectives: This project will provide Julius with a learning experience in the following areas:

- He will conduct state-of-the-art research in the nascent field of intellectual property and software engineering.
- He will be responsible for a small research project and get hands-on experience on doing an empirical study. Together, he and I will develop a set of hypotheses to test, and a methodology to perform the study.
- The main deliverable is a research paper. He will gain valuable experience in research writing.
- He will be gaining experience programming in Perl and SQL.
- He will also be learning about licensing and other legal issues of software.

Role the student will play in the research: As described above, Julius will be responsible of conducting an empirical study that will attempt to shed some understanding on how Free And Open Source (FOSS) licenses interact with each other within a FOSS component, and how components with different licenses interact with each other within Debian. He will work on this project alone under my supervision.

Nathalie Down, Women's Studies  Nature of research experience:

- Student will have an opportunity to learn about feminist participatory action research with racialised and Indigenous girls and young women.

Learning objectives:

1. Student will apply principles of qualitative data analysis to audio and visual data by analyzing data through thematic analysis and intersectional feminist frameworks.
2. Student will learn skills in community networking as a critical phase of community-based participatory action research by writing a small seed grant application to the Women’s Health Research Network or other funding agency.
3. Student will apply fundraising skills by searching the web for relevant funders.
4. Student will undertake web-based literature search for grey literature on social cohesion in second and third tier Canadian cities.

Role student will play:

- Student will work collaboratively with research team of academic and community based researchers by coordinating meetings and liaising with team members.
- Student will communicate research findings to diverse audiences in appropriate media.
- Student will provide research assistance to research team.

Buck C. Duclos, Pacific & Asian Studies  The proposal is for the student to
investigate the meanings and uses of the theoretical concept “social reproduction” and how this concept has been used in a set of theoretical texts. This concept “social reproduction” refers to the process whereby a particular system of production and social organization perpetuates itself across the generations. It entails economic elements and also wider structural elements of the political institutions, religious beliefs, etc. associated with the economic structure. Originally, in classical theory, this concept was designed to analyze wage-labour economies. The faculty supervisor, a historical anthropologist, is engaged on a comparative project that applies this concept to the study of pre-industrial, rural, and indigenous societies; i.e. in cases where wage-labour was absent or provides only part of the fund for social reproduction. The main cases are a sample of indigenous societies in the Asia-Pacific region. The research activity for the student is to process the relevant theoretical texts, by reading and extracting material, to create a comprehensive definition of the concept that fits the conditions of the societies under study.

Jacob Earnshaw, Anthropology The 3000 year old Kosapsom archaeological site is located near the Admiral’s Road Bridge on the Gorge in Victoria. UVic ran an archaeological field school in the 1990s. Mackie has recently been granted a small internal SSHRC grant to complete the writing up of this project, which was not funded at the time of excavation 12 years ago. The student will work with Mackie, learning many different aspects of archaeological lab work relevant to the NW Coast. This includes artifact classification and analysis, stratigraphic interpretation, faunal reporting, literature review, use of the BC Government Archaeology Branch report system, and permit report writing. The work would be partly hands-on with faunal and artifact assemblages, and partly research and writing of results, including making tables, statistical analysis, and photography. This student would then be well-positioned to work as a consulting archaeologist, especially if they had taken a field school, since practical experience in archaeology is at a premium. The student would assist Mackie in all the above activities, and would also have specific sub-projects derived from the main goals, for which they would be primarily responsible for interpretation. The overarching goal would include a BC Archaeological Permit Site Report filed with the BC Government, and a journal article on the findings at this unusual site, submitted to the Canadian Journal of Archaeology, or similar. Both of these manuscripts would be co-authored with Mackie, the student, and other contributors to the Kosapsom Project.

Willow English, Department of Biology Willow’s Honour’s B.Sc. undergraduate research will address the issue of chemical defenses among nudibranch gastropods, a group of marine invertebrates that usually derive defensive chemicals from their prey organism. The nudibranch that she will study feeds on prey (barnacles) that do not have known defensive chemicals. Willow will design well-controlled experiments to determine if this nudibranch is rejected by potential predators, suggesting the presence of a chemical defense that may
be synthesized *de novo*. Her role will be to conduct the experiments, analyze the data, and interpret the results. The learning objectives will derive from hands-on experience at designing and objectively recording results of behavioural experiments, applying appropriate tests for statistical significance of the results, and identifying the importance of her findings within the landscape of existing research.

**Martina Forster, School of Exercise Science, Physical & Health Education** Martina will work with the Action Schools! BC healthy eating data (1,100 children) and examine the relationship between sedentary behaviour and eating behaviour (energy intake, macro and micro nutrient profiles). She will extract the data from the database (for one of the data collection periods), run diagnostic tests and descriptive analyses and then conduct correlation and regression analysis. She will also conduct a literature review and draft a research article on the results. The learning objectives are to learn 1) how to review the literature and develop a related research question and hypothesis, 2) to extract data from a Filemaker Pro 10 database, 3) to conduct basic statistical analyses, 4) to summarize and report on the findings in the form of a publication draft.

**Christine Fritze, German & Slavic Studies** As part of a larger project on the transnational literature of German-speaking Switzerland, student responsibilities will include the following: transcription and translation of lengthy interviews, translation of short essays, editing references plus bibliographical research. All activities will be conducted under my guidance and supervision.

**Samantha Gambling, Biology** Samantha will be involved in research on ecological genetics, in particular, body size gigantism in freshwater fish observed in several remote lakes on Haida Gwaii. Part of the gigantism is due to the unusually long life span for this endemic population and Samantha will be exposed to multiple laboratory protocols including bone decalcification, embedding, staining and thin section preparation for aging of these long-lived fish.

In addition to these histological methods, Samantha will be developing a multi-trait database for comparing morphological traits and age structure of the fish in order to evaluate whether there is differential survival over the life history and to assist in preparation of a manuscript for a peer-reviewed journal.

**Emma Gerlach, Hispanic & Italian Studies** The student will work with the other nominee to transcribe into a computer text file the text of a 17th-century Spanish play (yet to be chosen among three possibilities). The student will become familiar with the process of text transcription, will learn about 17th-century Spanish printed or manuscript texts and about 17th-century Spanish drama.
Selina Gonzalez, Mathematics & Statistics  Selina was awarded an NSERC USRA this summer. Under my supervision we worked on developing a model to extend the Jolly-Seber-Tag-Loss model that I developed in a previous paper to account for heterogeneity due to multiple groups. Unfortunately, 4 months was not long enough to complete this project. Currently, we are writing code to estimate parameters in this new model. Thus the proposed research would include completion of this code, thorough exercising of the code using generated data, analysis of a real data set, and writing a manuscript for journal submission. The student would become proficient in statistical programming in R software, learn to collaborate with a scientist in another country (Caleb Gardner, University of Tasmania, Australia), and learn to communicate her work by writing a scientific paper for submission to a refereed journal. The student would continue developing the R code, use this code to analyse a lobster tagging study that had heterogeneity in capture probabilities by sex, and write the first draft of the manuscript.

Jennifer Grants, Biochemistry & Microbiology  Jennifer’s research project will provide her with a hands on experience in modern life sciences research, allowing her to acquire the skills necessary to pursue graduate research in life sciences. The learning objectives for Jennifer include hypothesis formulation, experimental design to test the hypothesis, acquisition of data and critical analysis of data as it addresses the hypothesis. Jennifer will have the responsibility of designing and carrying out the lab experiments for her project, writing a thesis analyzing her data and defending her conclusions at an oral exam.

Jennifer’s research project is an investigation into the structure and function of KS1, a zinc finger protein that regulates gene expression by binding to specific sites in DNA. KS1 has an important role in suppressing neoplastic cell growth by blocking the action of several oncogenes. Jennifer’s goals are to identify the key base pairs in the DNA, and the key amino acids in KS1, that mediate their interaction.

Dallas Hermanson, Curriculum and Instruction  Dallas will help to coordinate, collect data, and help with analysis of findings from the following research projects: 1) SMART research program with K-12 schools and teacher education programs, 2) video conferencing research project, and EDCI 336 evaluation project. Dallas would help with research coordination, the technical setup for data collection, data collection (F2F and online), and receive support through analysis.

Dann Hoxsey, Sociology  This research is intended to meet the requirements for an Honours BA in Sociology, under the supervision of Dr. Steve Garlick and Dr. Dorothy Smith. Through the use of Institutional Ethnography, this project will focus on the ways in which academic discourses mediate gay/lesbian identity construction. Through a set of (four to six) exploratory interviews with members
of the UVic peer support collective, this project will look into the methods used to
dem certain books as "valuable," or "helpful," and link the ideologies behind a
theoretically "relevant" form of identity construction with the lived realities of the
people disseminating the information to others. The student will develop a better
understanding of the link between social constructions of identity and theory;
expand upon the term "homonormative;" and hone his skills as an institutional
ethnographer. Furthermore, this honours thesis will be foundational to the
graduate work he intends to follow. The student will conduct the study, with
supervision from Drs. Garlick and Smith.

**Mason Koenig, Department of Music** The goal of this project is to develop an
efficient pedagogy in order to give facility in playing complex polyrhythms. As a
composer of contemporary music, I have found that the sight of even the most
basic polyrhythm overwhelms even a trained musician. In order to counteract
this, the university must incorporate practices that promote understanding of the
contemporary language and the demystifying of the inherent visual complexity.

I believe that, at the most basic level, rhythmic accuracy is essential in
rehearsing new compositions; it would be counter-productive to work on pitch
when the vertical harmonies are not sounding properly. As I hone this pedagogy
of complex polyrhythms, I hope to implement it at the university level in order
for Canadian universities to compete on a more international level.

**Danielle Leduc, Political Science** The proposed research experience would be
writing an honour’s essay. The learning objectives for the student are: 1) to
conduct independent research; 2) to write a research paper that has a focused
research question and a well developed argument that is supported by both
theoretical approaches and empirical evidence; and 3) to present and defend her
honour’s essay at a seminar involving faculty and other honours students. The
student will take the primary role in researching and writing the honour’s thesis
under the supervision of Dr. Feng Xu. Dr. Xu’s research project is on the socio-
economic modes of governance in post-socialist China, using the governmentality
literature inspired by Michel Foucault as well feminist literature. The student’s
proposed research matches very well Dr. Xu’s expertise and research interest.

The student’s proposed essay will explore the supposed paradox of how China’s
modernization has offered greater sexual freedoms to urban youth, while
maintaining an imposed definition of sexuality in state laws and discourse. This
research question is posed within a body of theoretical literature addressing
sexuality, liberalization, modernity, culture, population growth, and authoritarian
control in China. The student will use feminist theory and the theory of
governmentality in her research. Methodologically, she will conduct a textual
analysis of government documents relevant to the research questions, which will
be framed by qualitative and quantitative secondary data.

**Kayla Lehman, Theatre** The student will conduct research assistance for
Twentieth-Century Theatrical Dance in Canada: A Cultural History, a book currently being written by Dr. Lindgren. Despite the long-standing presence of theatrical dance in Canada, the art form has received relatively little scholarly attention. The few published accounts of dance in Canada that do exist generally address the accomplishments of key individuals and organizations – those artistic directors, choreographers, performers and companies central to enumerations of the aesthetic development of the discipline. While this approach is valid, it tends to reinforce the quixotic view that dance is a hermetic enterprise influenced primarily by a select group of artists.  

Twentieth-Century Theatrical Dance in Canada: A Cultural History refutes this perception of theatrical dance by situating the art form within its various social, political, economic, and aesthetic contexts, and by examining how the dance community has responded to shifting attitudes and values in Canada throughout the last century. For instance, this study considers the various ways that attitudes towards gender roles, race and ethnicity, nationalism, regionalism, ability/disability and age have been constructed, conveyed and challenged on Canadian stages, and in Canadian studios and administrative offices. In short, this book is based on the premise that theatrical dance in Canada is a form of “embodied history” that provides a unique vantage point from which to consider Canadian history. 

Learning objectives for the student: Ms. Lehman, the nominated student, is a Theatre History major. This project will help her acquire and hone skills necessary for Cultural History scholarship. Therefore, the main learning objectives for the student are as follows:

- Improve archival and secondary document research skills
- Evaluate primary source materials (e.g. determine authenticity, contextualize, etc.)
- Learn strategies to organize and manage research materials and data
- Learn more about politics, society and the arts (particularly dance) in Canada during the twentieth century.

The role that the student would play in the research being undertaken: Under the direction of the supervisor, Ms. Lehman would contact archives across Canada to arrange for access to relevant collections and archival material. She would also have the opportunity to research and evaluate primary source materials currently in the supervisor’s archival document collection and to conduct secondary source research.

Heather Lohnes, Visual Arts I propose to develop a series of paintings exploring colour fields relating to the representation of the human head. The work will push boundaries of what we normally understand in form as the “picture plane.” The content of the paintings is immersed in our experience as social beings.

The learning objective for my assistant will be to gain knowledge and experience in the development of a major work of art from its formative stage to its
realization.

As my Creative Assistant, Heather will prepare materials and structures integral to the project. She will also help manage the studio and organize the final exhibition of the work.

**Carly Malloch, Greek & Roman Studies** I am currently engaged in a project to produce an interactive graphic geographic database of events in the Library of Apollodorus, for publication as a searchable map on the web. Ms. Malloch will assist in the compilation of the database of events and characters, and will be assisting in the design, coding and production of the website, under my supervision.

**Cara Manning, Earth & Ocean Sciences** Ms. Manning is studying the cycling of nitrous oxide in coastal environments. Nitrous oxide is an important greenhouse gas whose concentration in the atmosphere is increasing. Ms. Manning spent her summer collecting data on this cycle in a low oxygen environment. Over the coming year, she will be interpreting and numerically modelling the data, presenting her research at an international conference, and preparing a publication. This project will give her the opportunity to carry her project forward from simple data collection to its meaning and public presentation.

**Francesco Marass, Computer Science** The nature of proposed research: Title: Genome Rearrangement Problems Reconsidered The proposed project in a Bioinformatics project, in particular the area of genome rearrangements. The genome rearrangement distance as well as the evolution of genomes if of great interest with respect to better the understanding of the evolution of species in general of genes in particular. Francesco will be starting the project by reviewing the literature of two areas: Genome Rearrangements and Gene Duplication Models. He will then look into the possibilities (pros and cons) of combining these models or suggesting a new one taking into account not just typical genome rearrangement events but also (multiple) gene duplications.

The research results have the potential to be tested on data in the Department of Biology. Learning objectives of the student: Surveying literature, abstraction and modeling, evaluating of models, combining techniques, interdisciplinary language (here computer science and biology/genomics).

The role student would play in the research: The plan is that Francesco would collaborate with his supervisor in very regular meetings as well as learning some independence in approaching research. If the project is successful, he may even be able to play a lead role in a publication on the topic.

**Spencer Martin, Biochemistry & Microbiology** Cancers develop through the accumulation of mutations in oncogenic genes. Through a collaboration with the BC Cancer Agency’s Genome Sequencing Centre in Vancouver, four mammary
tumour cell lines have undergone extensive transcriptome sequencing (so-called “next generation sequencing”) to identify the tumour-specific mutations. Spencer will identify immunogenic peptides derived from the list of mutations and use these to generate a vaccine with the goal of eliciting a therapeutic immune response against the tumor. This project will constitute Spencer’s honours thesis. In addition, it is expected Spencer will write and submit at least one first-author, peer-reviewed manuscript based on this work. He will gain an excellent understanding of T cell immunity, peptide vaccination, and cancer biology.

Spencer will also benefit from performing in vivo studies with mice thus gaining experience in mouse handling, injections, blood sampling, and dissection. Finally, Spencer will learn several laboratory techniques including ELISA, ELISpot, flow cytometry, QPCR, western blotting, and peptide binding assays. Spencer will lead this project under the supervision of Brad Nelson, and with the support of several post-doctoral and graduate students in the Deeley Research Center and the Genome Sciences Centre. He will perform all experimental techniques described above, and will prepare a thesis and manuscript when the project is completed.

Nicole McMorran, Child & Youth Care  The Ministry of Children and Family Development (MCFD) has longitudinal, time series data on all families in BC who have received child welfare services. Since 1999, there is a strong upward trend in Offers of Support Services (OSP) as a response to intakes. Currently, OSP is the second most common response after investigation to any type of intake. It would be useful for MCFD to know what is driving this trend, for example, is it limited to certain regions or sub-regions, non-Aboriginal families, age groups, specific types of concerns, and it would be useful to know if the same types of families who formerly were investigated are now receiving offers of support services. The students will be co-supervised by Dr. Doug Magnuson and Daljit Dhadwal of MCFD. They will learn how to use a spreadsheet to analyze and interpret data.

Tamara Meixner, Psychology  An important question in developmental psychology is how experience changes the way young children perceive and recognize objects in their world. For her research project, Tamara will examine the time course of object recognition by studying children, ages five to twelve years old. She will apply a novel method where a typical and an atypical object will be morphed together to form a new hybrid object. The critical question is whether young children see the hybrid as looking more like the atypical or typical parent image. Their response will reveal something about how they organized object concepts in memory. Tamara will be the lead investigator for this study and be responsible for all facets of the research, including stimulus generation, data analysis and documentation. It is anticipated that at the end of the project, she will have results that can be submitted to a professional journal for publication.
Rebecca Morris, Sociology  This research is intended to meet the requirements for an Honours BA in Sociology, under the supervision of Dr. Karen Kobayashi. Using grounded theory methods, Rebecca's study seeks to explore the nature of caregiving in adult stepchild-older stepparent dyads. Data collected via in-depth face-to-face interviews with adult step-children (N = 6) will provide insights into whether or not caregiving relationships in stepfamilies differ from caregiving relationships in non-stepfamilies in later life, and, if so, how and why this is the case. In particular, the study aims to capture some of the salient effects of divorce on stepchildren's attitudes and behaviours toward older stepparents in the caregiving context. Probes for boundary ambiguity, decreased contact between father and child, and greater geographical distancing between parent and child, themes that emerge from the literature in this area, will be used as guideposts during the interview process. Rebecca's focus on stepfamily relationships in later life is timely and relevant given 1) the rapid aging of the Canadian population; and 2) the fact that stepfamilies continue to make up an increasing proportion of families in Canada. The student will develop extensive experience in qualitative research, from initial project design through field work, data interpretation and analysis, and final write-up. This is invaluable preparation for future research projects. This honours thesis will be foundational to the graduate work Rebecca intends to pursue. The student will conduct the study, with supervision from Dr. Kobayashi.

Greg Owen, English Department  Nature of Proposed Research Experience: The student will assist with the research for and preparation of the manuscript for the Broadview Anthology of Victorian Prose (300,000 words), under contract with Broadview by Leighton and Surridge. This anthology will be a teaching text for undergraduates in Victorian Studies across North America. Each entry will require a biography and annotations; the whole MS requires proofreading; and the introduction requires research and writing. Learning Objectives for Student: To hone library and bibliographical skills; to learn about the professional publication process and the preparation of professional manuscripts; to study Victorian texts, biographies and culture; and to engage critically with the university learning process itself in the preparation of a student textbook. Student Role: Under the supervision of Leighton and Surridge, the student will participate in researching, annotating, proofreading, and copyediting for the anthology. This work will be undertaken at time independently and at time in active collaboration with Leighton and Surridge.

Andrea Price, Earth & Ocean Sciences  Sediment trap study of dinoflagellate cyst production in Saanich Inlet (BC, CAN). The project aims at analyzing dinoflagellates and their cysts in sediment trap samples from Saanich Inlet (BC, Canada), along with available water quality parameters provided by Victoria Experimental Network Under the Sea (VENUS). Andrea Price will collect sediment samples from the Inlet and will perform their subsequent chemical treatment in the Paleoenvironmental Laboratory at SEOS, UVic. Extensive microscopy work
will require the identification and count of dinoflagellate cysts by the student. Multivariate statistical analysis will be performed to identify major environmental parameters affecting dinoflagellate cyst production. This project will contribute to the research program addressing phytoplankton response to environmental change in the region.

**Kyeren Regehr, Writing** The proposed project is to research secondary and primary materials on the Arthurian legends and medieval England for the purpose of writing a manuscript of poems about King Arthur and his court. The objectives for the student are as follows: to learn the proper research methods to uncover secondary sources, both those readily available and rare; to acquaint herself with all of the primary sources (e.g. *Anglo-Saxon Chronicles*) and to learn how to select the pertinent material that will feed into the writing of a sequence of poems. She will learn to balance the information she finds in the documents with her own original material. With guidance from her supervisor, the student will be responsible for this research and for creating the body of work that grows out of it. The supervisor will provide regular feedback to the manuscript in progress.

**Anna Robinson, French** Since my sabbatical leave of Fall 2008, I have published/will have published five journal articles in Australia, France, the UK, and Canada. All five articles address the teaching, reception and analysis of Canadian Literature (written in French and English). The articles are in French and English, and I wish to integrate them into a book I was writing before my leave. The learning objectives for the student are to acquire a better written knowledge of Canada’s two official languages; to do literary translation; to learn to manipulate research data bases in the Library; to find articles to supplement my research; to learn how to write an academic bibliography, and to work under some time pressure. The student would learn to translate literary passages under my supervision; carry out independent research in appropriate library date bases, use on-line communication systems in both French and English and work with me to revise and integrate my work into my book.

**Morag St. Clair, English** *The Map of Early Modern London* (*MoEML, mapoflondon.uvic.ca*), a hypertext atlas of Shakespeare’s London based on a 6’2” panorama of the city, has been driven by student research since its inception in 1999. Students have taken responsibility for encoding; database design; primary and secondary research for encyclopedia-style articles on London streets, sites, and cultural activities; collation of primary texts; compilation of references to London streets in plays; transcription and light annotation of early print texts; compilation of secondary sources for the site bibliography; compilation of biographical details for the site personography; and research into the precise location of sites and boundaries.

Under the present program, the research assistant will continue the primary research for the encyclopedia-style articles on each street and will have the
opportunity to author or co-author several articles on streets or sites of his choice. The student will compile the London references from at least one play and locate each reference on the map. The student will also perform some light encoding using Domestique, the program developed for the MoEML by the Humanities Computing and Media Centre, and oXygen (an XML editor). Learning objectives for the student:

- To be able to use the following databases and on-line repositories of primary materials: MLA International Bibliography, Historical Abstracts, the Royal Historical Society Bibliography, Guildhall Library Catalogue, British Library Catalogue, Archives in London and the M25 Area (AIM25), The National Archives (A2A), and Early English Books On-Line.
- To know and be able to use important print and digital reference works, such as *The London Encyclopedia, The Survey of London* (English Heritage Research), *The Oxford English Dictionary*, and *The Dictionary of National Biography*.
- To keep records of research in RefWorks (a bibliographic management program).
- To understand the conventions of early civic maps (such as the use of the bird’s-eye perspective) and the nature of what they depict (the *urbs*, the *civitas*, the *res publica*).
- To digest research and write short encyclopedia-style articles integrating primary and secondary historical and literary sources to elucidate the history and cultural significance of a street or site in early modern London.
- To write for the digital environment as opposed to the print environment, which permits linked pages instead of a linear argument.
- To have mastered correct MLA citation style for bibliographies and in-text citations.
- To have a basic sense of how to mark-up texts using the codes of the *Text Encoding Initiative (TEI)*, upon which she might build by taking a course at the Digital Humanities Summer Institute.
- To understand how early books were constructed and how early bookmaking techniques determine modern citation.

Role of student:

1. The student will initially be a student, learning from me how to use the primary research tools of scholars of early modern literature.
2. Once the student has a basic grasp of these tools, she will undertake to research five streets or sites, adding more as time allows.
3. She will digest this research and produce two short articles, either in collaboration with me or under my close editorial supervision.
4. She will also encode some of the articles written by other students in the last year, using Domestique, oXygen, and templates that I have developed in conjunction with past research assistants.

Christina Service, Geography  The Spatial Pattern Analysis and Research Lab
has an ongoing project to map bathymetry in the nearshore using sonar and kayaks. In the near shore, small bathymetric changes can have a large impact on ecology; yet, in Canada, near shore data are limited. Christina is interested in working with Dr. Nelson to develop a system to collect and map near shore bathymetric data. The learning objectives include: 1) gaining field experience in coastal environments; 2) improving GIS skills; 3) gaining experience with research writing and presentations. Christina will work as part of a SPAR lab team to collect data, validate data, and generate maps within a GIS.

**Danica Sita, Hispanic & Italian Studies** The student will work with the other nominee to transcribe into a computer text file the text of a 17th-century Spanish play (yet to be chosen among three possibilities). The student will become familiar with the process of text transcription, will learn about 17th-century Spanish printed or manuscript texts and about 17th-century Spanish drama.

**Sarah Smith, Linguistics** Project: investigation of the pronunciation details of the SENCOTEN language, spoken on the Saanich peninsula. Sarah will learn to use lingual ultrasound (a state-of-the-art tool newly available at UVic) to study speech production. She will also learn about the SENCOTEN language, with which she has already had some experience as a high school student. Finally, she will learn about conducting linguistic fieldwork with local elders, the last fluent speakers of the language. Sarah will work primarily on processing and analysing ultrasound videos. She will also be encouraged to participate on other aspects of the project: interpreting findings within current linguistic theory, presenting findings at scholarly meetings and designing follow-up studies, etc.

**Sara Statham, Geography** Sara will be working on a project that examines the ecological concept of Balance of Nature (hereafter, BON) narrative as a cultural entity viewed through the lenses of the media. The learning objectives will be to explore the degree to which the BON metaphor has produced cultural and social misconceptions about the structure and function of nature (rather than having fostered any meaningful understanding), to gain experience in discourse analysis, and to experience the preparation of a thesis. Sara will play a lead role in the research.

**Ellie Stephenson, Environmental Studies** I am the principal investigator of an interdisciplinary, intersectoral research program, the Mountain Legacy Project, based at UVic. We work with the world’s largest collection of systematic, historical mountain images that were produced by survey teams creating the first topographic maps of western Canada. Field crews have gathered more than 3,000 high resolution, repeat images from exactly the same locations as the originals, from hundreds of mountain summits in Alberta and BC. Deploying various interpretive and analytic methods, we have uncovered distinctive patterns in land use, ecological processes, and indirect changes resulting from climate change. In additional to scholarly work, the Mountain Legacy Project has
provincial and federal partners who make use of the images for management purposes. Ellie Stephenson has strong research skills and superb academic accomplishments. By connecting with this research program, she would hone her skills and, in particular, her historical research ability. She would become much more familiar with advanced computer visualization tools for image interpretation and analysis. Based in the Visual Lab in ENVI, she would work alongside six other staff and graduate students and thereby gain direct experience in a lab-based research environment. A high priority and nicely-bounded project is the creation of a landscape-level, interactive, web-based map of the photographic survey locations for more than 150 historical surveys (these surveys comprise more than 140,000 photographs). This is painstaking, historical work that would also involve consultation with specialists who know the collections and historical place names. Our new website will launch on November 20, 2009 <mountainlegacy.ca>.

Andrew Sutherland, Theatre  Historical research on European medieval religious drama (French, German, Dutch, Spanish, Italian) for faculty supervisor’s in progress history of applied theatre; extending the student’s existing knowledge of theatre history, with a particular focus on the historical antecedents of applied theatre; and gathering and compiling book-based historical data.

Student in Economics  The student will research the high-definition DVD format war between Blu-ray (backed by Sony) and HD-DVD (backed by Toshiba) that recently ended in victory for Blu-Ray. The investigation will involve both a theoretical and an empirical model and will use point-of-sales data from the Nielson Company (the student has already obtained these data). The student will learn how to develop a theoretical model (generally a system of equations), test it with an empirical model and data, draw conclusions based on those results, and write the results up in a scholarly paper. This will hone a diverse and very useful set of skills. The student will take a leading role in the research. This is the student's idea and while the student will be carefully supervised, the student is not serving as an RA to anyone.

Ryan Tonkin, Philosophy  The faculty supervisor is organizing a collaborative research project, for which he will seek SSHRC funding. This project will bring together philosophers of language and aestheticians investigating aesthetic judgement. The student will undertake a literature search, prepare an annotated bibliography, assist in the preparation of the application to SSHRC and co-write a research paper based on initial results. The student is expected to become more adept at philosophical research.

Andrew Usher, Economics  Andrew will work closely with Merwan Engineer and Paul Schure to develop a theoretical model of screening in the market for startup capital for new firms. The intuition behind the idea is that while it is very costly for entrepreneurs to find startup capital (venture capital angels are hard to come by) this costly search actually serves a useful role in efficiently allocating capital
among competing startups. The search for venture capital screens out low quality projects in favor of high quality projects. In performing this research Andrew will develop a broader understanding of models with asymmetric information and search models. This will most likely be purely theoretical work, rather than empirical. Andrew will perform literature reviews, develop an understanding of screening and matching models, and work with Dr. Engineer and Dr. Schure to develop a model of the allocation of venture capital to startup firms.

**Trevor Van Damme, Greek & Roman Studies** The student will examine changes in Bronze Age Aegean (circa 1600-1200 BC) populations in SW Anatolia and will look at how these reflect contemporaneous changes in other parts of Greece.

Trevor will learn methods of archaeological research with specific reference to mortuary practices, prehistoric Aegean scripts and ceramic evidence. He will put into practice skills he has developed through mapping tombs in Tanagra (Greece) and by walking survey tracts, as part of my research project in Eastern Boeotia.

Trevor’s research project looks at cultural change in SW Anatolia in a way comparable to my research questions in Boeotia, central Greece. The results of his work should complement on-going work of my own. In the summer of 2010 he will return to my field project in Boeotia and be well-prepared to contribute to my research.

**Serge Vincent, Electrical & Computer Engineering** The research program is to develop nanostructured metals for biosensors that will be used for the early detection of cancers. The research professor has been involved in two grants in this area, in collaboration with the BC Cancer Agency. He has also had invited papers, invited book chapters and several invited conference presentations on this topic. For the research project, the student will obtain hands-on training in nanofabrication and nanocharacterization, using state-of-the-art facilities at SFU and UVic. They will also receive training in optics, consequently, it is expected that the student will have a holistic training opportunity in nanotechnology, from an optics/biosensor perspective. The student will be responsible for designing, fabricating and characterizing a sample, in cooperation with two graduate student mentors.

**Kate Waldie, Chemistry** Synthesis of indigo derivatives – more complete project than undergraduate labs, use of multiple lab techniques. Learn more inorganic techniques than previously, e.g. magnetic measurements. Carry out experiments, analyze data, write report and possibly publish.

**Mary Warner, Linguistics** Mary Warner will help Dr. Xiang to set up the new Language and Cognition Lab in the Linguistics Department. She will coordinate with Dr. Xiang in terms of lab management, data collection and analysis. During the process of setting up the lab, Mary will learn how to run behavioral and
electropsyshiological experiments on language comprehension. She will also be involved in research projects that investigate the process of constructing syntactic and semantic representations during language comprehension.

**Megan Webber, History** Megan will be conducting primary source research for my large-scale research project on the history of capital punishment in London from 1689 to 1837. In particular, she will be using several primary source databases in the library (Eighteenth Century Collections Online, 17th & 18th Century Burney Newspapers) as well as microfilm copies of archival records to investigate contemporary assumptions regarding the linkages between criminal behaviour and urban poverty, and how those linkages might be broken by the activities of private charitable organizations. The objective is to help Megan acquire familiarity with standard historical materials, to help advance her research for her Honours Thesis, and to prepare her for graduate-school level historical research in the event that she may choose (as I hope she will) to undertake further study at that level.

**Chelsea Wilson, Anthropology** As part of a directed reading course in research methods in Human Osteology with Dr. Helen Kurki, Chelsea will engage in a research project of her own devising. This research will focus on investigating the environmental and genetic factors influencing the expression of skeletal traits used in biodistance analyses. The objectives of the project are to enable Chelsea to engage critically with current bioarchaeological literature, to gain experience seeing a research project through from start to finish, and to facilitate the acquisition of skills relevant to osteological research. The latter includes the management of the logistics of traveling to visit an appropriate human skeletal collection, practising the relevant skeletal data collection techniques, management and analysis of skeletal data, and the production and dissemination of research results.

**Nathan Wren, Mechanical Engineering** The proposed research project will explore how passive impulsive forces applied to users through haptic computer interfaces (e.g., joysticks with force feedback) affect the perceived rigidity of virtual objects. The student will learn: real-time methods for rigid body simulation; control techniques based on energy concepts; the synergistic use of physics-based modeling and control for improved touch in virtual environments. The student will develop and carry out a user study to validate the hypothesis that impulsive forces improve users’ perception of rigid contact in virtual environments.

**Amelja Zoehner, History in Art** This year I am writing an introductory monograph on the German performance artist Joseph Beuys to be published by London-based Phaidon Press. My objective is to train Ms. Zoehner as a researcher and to introduce her to the scholarly process of publishing in art history. She will learn how to develop a book concept chapter by chapter, how to conduct advanced
research at libraries and archives, and how to effective communicate complex ideas in writing. Ms. Zoehner will serve as my research assistant, helping me to track down books, exhibition catalogues, articles, and personal correspondence drawing on the resources of the University of Victoria McPherson Library, the libraries of other institutions, and international research centres such as the Archives of American Art, Smithsonian Institution. She will also assist in locating art to be reproduced in the book, and I will introduce her to the logistics of art-related publishing (permission to reproduce images, publisher stipulations, and so forth).