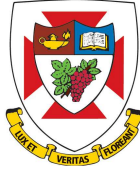


THE UNIVERSITY OF
WINNIPEG



Special Thanks:

Judges:

Dr. Charles Wong - *Canada Research Chair in Environmental Toxicology*

Dr. Jacques Tardif - *Canada Research Chair in Dendrochronology*

Dr. Tom Carter - *Canada Research Chair in Urban Change and Adaptation*

Dr. Dawn Sutherland - *Canada Research Chair in Indigenous Science Education*

Keynote Speaker:

Debra Radi, MEd, *Chair of The University of Winnipeg Board of Regents*

Opening Greetings:

Dr. Neil Besner - *Vice-President (Students and International)*

Prize Presentation:

Dr. Brian Stevenson - *Vice-President (Academic)*

Moderators:

Jules Carlson

Jaimee Dupont

Catering:

Diversity Foods & The University of Winnipeg Faculty & Staff Club

Thank you to all participants and guests, we look forward to seeing you again next year!

SECOND ANNUAL GRADUATE STUDENTS RESEARCH COLLOQUIUM

APRIL 8, 2010

For any questions about this event, please contact Deanna England, Graduate Studies Officer at 204-786-9093 or d.England@uwinnipeg.ca

Schedule of Events:

7:30AM– 8:30 AM: Registration & Coffee
8:30 AM: Opening Greetings—Dr. Neil Besner
8:45 AM – 11:45 AM: Oral Presentations
10:00 PM – 10:30 AM: Poster Presentations
11:45- 1:00 PM: Lunch
1:00—2:45 PM: Oral Presentations
2:45 PM: Keynote Speaker— Debra Radi, MEd
“The Importance of Teaching Effectiveness in Higher Education”
3:15 PM: Prize Presentation—Dr. Brian Stevenson
3:30 PM: Reception

Oral Presentation Abstracts:

Joel Jameson—*BioScience, Technology & Public Policy Program*: **A Test of the ‘Reproductive Landmarks Hypothesis’ to Explain the Mortality of Bats at Wind Turbines.** The global wind energy sector is rapidly growing and numerous studies are reporting large-scale bat mortality at wind plants due to collisions with turbine blades or barotrauma injuries. In North America, the migratory tree bats comprise most of the fatalities at turbines. Reasons for such widespread mortality of these bats, is still unclear. Available evidence suggests that these species are attracted to turbines but few data exist to explain this apparent attraction. One possible explanation, which has been termed the “Reproductive Landmarks Hypothesis” and which is supported by a body of circumstantial evidence, proposes that migratory tree bats use tall, prominent landscape features as focal points for mating activity during their fall mating/migration season. In 2008 and 2009 I tested several predictions of this hypothesis using a combination of mortality surveys at wind turbines and acoustic activity surveys at turbines, other tall structures (communication towers), and control sites.

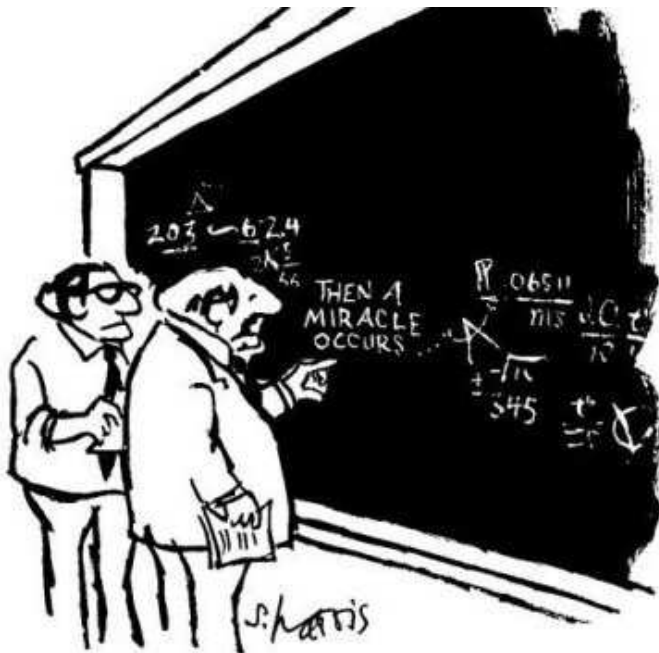


Poster Abstracts:

Sergey Yegorov—*BioScience, Technology & Public Policy Program*: **Bioinformatic analyses of relaxin receptors in teleost fish.** Relaxin and related peptides belong to a diverse group of hormones implicated in a number of important functions in mammals. In our study, we aim to elucidate the relationship between relaxin & related peptides and their receptors (RXFP) in teleost fish using bioinformatic analyses. We used phylogenetic methods to reconstruct the evolutionary relationship among RXFP genes, a syntenic gene analysis to identify which copies of the teleost RXFP genes are orthologous to those in mammals, and an analysis of the strength of selection favoring distinct amino acids in different copies of the RXFP genes. These analyses allowed us to identify: 1) which RXFP genes were present in the common ancestor of teleosts and tetrapods, 2) approximately when and why different copies of the RXFP genes arose in teleosts and 3) which amino acids may be integral in creating functional differences among the RXFP proteins in teleosts.

Corinne Stevens & Vaska Miteva Karamanova —*Marriage and Family Therapy Program*: **Many Nations One Heart Youth Drumming & Support Group.** This was a pilot project with these goals; Build intercultural connections & communication between Aboriginal & Newcomer youth/families/communities; facilitate healing of personal & family challenges in culturally appropriate ways. We conducted 2 groups with 24 youth total (Aboriginal & Newcomer). One of the criteria for participation was that an adult caregiver or volunteer took part in the group. Each group was run by 2 co-facilitators, Corinne Stevens (Aboriginal) and Vaska Miteva Karamanova (Immigrant), who are family therapists working towards their Master’s in Marriage & Family Therapy degree. Activities were; drumming on 2 Aboriginal community drums/African drumming, storytelling and sharing circles. Elders/community members from Aboriginal and Newcomer communities came in and shared their stories of struggles and hope. We did a pre-group and post-group qualitative questionnaire with all youth group members.

Kristin Jonasson—*BioScience, Technology & Public Policy Program*: **Differences in Hibernation Energy use by Male and Female Little Brown Bats (*Myotis lucifugus*)**. Male and female little brown bats (*Myotis lucifugus*) invest their energy differently throughout the year. Although both sexes must acquire sufficient fat reserves to survive the winter, males invest their energy in reproduction when mating during the fall and winter whereas females do so while pregnant and lactating in the spring and summer. Females must retain more fat during hibernation to emerge with adequate reserves to permit reproduction. This leads to the prediction that females will be thrifter with their hibernation energy stores than males. To test this hypothesis, I assessed body condition during different phases of hibernation and I monitored the skin temperatures of hibernating bats to quantify patterns of torpor and arousal using temperature-sensitive radio transmitters in a population of bats from central Manitoba.



"I THINK YOU SHOULD BE MORE EXPLICIT HERE IN STEP TWO."

Leping Zou—*Applied Computer Science & Society Program*: **Twig Pattern Search**. For current search engine, we got results ranked by popularity. However, the most popular topics are not always I want. Millions people have millions different favors. So, the main challenge is how to dig the information up from the tremendous database of Internet according to different people's favor. In computer science, "favor" is pattern. We call it "Twig Pattern Search". Unlike index methods that split a query into several sub-queries, and then stick the results together to provide the final answers, twig pattern search uses tree structures as the master unit of query to avoid expensive join operations. We present an efficient algorithm for tree mapping problem in XML database. Given a target tree T and a pattern tree Q , the algorithm can find all the embeddings of Q in T in $O(|D| |Q|)$ time, where D is the largest data stream associated with a node of Q .

Adriana Suarez—*BioScience, Technology & Public Policy Program*: **Fragmentation, such a big deal for Chokecherry reproduction?** Forest fragmentation may negatively influence plant reproduction. I explored the consequences of forest fragmentation on the reproductive characteristics of chokecherry, a widely distributed self-incompatible (SI) species, by comparing fragmented and non-fragmented forests in Southern Manitoba and testing for reproductive output, pollen limitation and self-compatibility. Preliminary results suggest negative effects of fragmentation on the reproductive success of chokecherry due to pollen limitation, which is significantly higher in fragmented compared to continuous forest. On the other hand, I did not find effects of fragmentation on the breeding system. Most of the individuals are SI, but some expressed partial SI in both types of forest, thus the strength of SI in chokecherry is influenced by factors other rather than fragmentation. Future work includes pollinator observations and marker-gene analysis to explain the causes of pollen limitation and examination of other factors (inbreeding depression, density) that may be shaping the breeding system in these populations.

Kevin Mitchell— *English with a Focus in Cultural Studies Program*: **Skinatomy: Thinking Through the Wound.** “Wound” – as constitutive lack – plays a founding role in the construction of any and all identification (including “personal identity”), and as such, any notion of an untarnished skin is delusion-driven wishful thinking. In this sense it will be argued that “wound” – despite its ordinary

negative connotations – is actually a positive organizing force – and accomplice – in the (necessary) delusionality of everyday life. The wound – as positive force – is the condition of possibility for its own stigmatization as “bad”, and in a spectacular reversal, actually comes to found the very language that so evaluates it. It will be shown that the wound falls out of any axiological evaluation to such an extent that it may be said, in a Nietzschean vein, that the wound truly is “beyond good and evil”.

Anthony Agomuoh—*BioScience, Technology & Public Policy Program*: **Anti-Malaria-Directed Phytochemical Studies On Medicinally Important Plants.** Malaria continues to be a disease of major public health concern all over the world, claiming numerous lives and posing unimaginable economic burden particularly in the developing countries. Difficulties in the development of effective vaccine to eradicate this disease have made the situation more precarious. Compounding this scenario is the development of resistance to most anti-malarial drugs in current use. Our current knowledge of the biochemical pathways in the plasmodium parasite metabolism, has offered opportunities

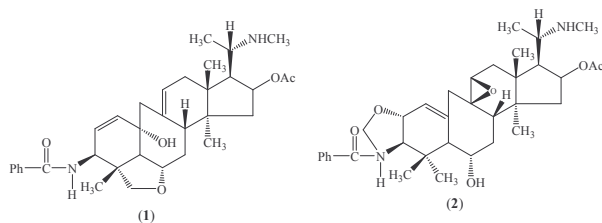
for the development of novel drugs that will stand the taste of time. The important role of natural products in the development of therapeutic agents for the treatment of varied medical conditions cannot be overemphasized. We are working on a few medicinally important plants from Nigeria, to carry out anti-malarial directed photochemical studies on them. In this presentation, biological activities of *Nauclea lotifolia* and structure of natural products, isolated from this plant, will be discussed.

Christa Rigney—*BioScience, Technology & Public Policy Program*: **COSEWIC: Is it Doing our Insects Justice?** Insects are of vital importance to global ecosystems and account for 60% of Canadian biodiversity, with an estimated 55,000 species. Extrapolated estimates suggest that 5,500 species are threatened with extinction. Given this, the following question was asked: “Is the current COSEWIC assessment process effective and appropriate for the conservation and protection of threatened insects?” COSEWIC had assessed only 33 species of insects (as of December 2009), indicating that the current COSEWIC status assessment progress does not match the need. Insects are being under-evaluated by COSEWIC and there appears to be a ‘vertebrocentric’ bias in the number of assessments conducted and in the assessment process. Most of the challenges to insect status assessment are related to the use of certain quantitative data criteria and an individual species-based approach. Implementation of other assessment methods, particularly more broad approaches, are advised for wider protection of more species, particularly among under-assessed groups of insects.



Jessica Jacobson—*English with a Focus in Cultural Studies Program*: **Revolutionary Mimesis in Popular Dance: The Performance of Abject Bodies in Fin-de-siècle France.** This paper analyzes the performances of fin-de-siècle popular dancers in France, specifically those of Loie Fuller, la Goulue, and Polaire. These dancers performed corporeal and abstract representations of the ‘abject bodies’ of their culture, both overemphasizing and intervening in the dominant and institutional discourses (medical, psychoanalytic, colonial) of the period. An overflow of anxiety around these performances arose in venues such as the popular press. I will read these dancers’ performances in terms of the contemporary responses they elicited, through analysis of both fin-de-siècle critical responses and how their contemporaries encoded their performances in visual representations. I argue these dancers can be understood as resistant to the ideology that they seem to be “playing straight” in their performances. Rather than simply mimetic, these performers replaced an institutional spectacle of a feminized Other with an embodied performance of unconscious forces, frustrating the symbolic order of fin-de-siècle French culture.

Abin James—*BioScience, Technology & Public Policy Program: Phytochemical Studies on *Buxus Natalensis**. The plants of genus *Buxus* (Family: Buxaceae) are rich source of steroidal/triterpenoidal alkaloids. These alkaloids have shown interesting biological activities including anti-malaria, anti-TB, anti-HIV and anti-acetylcholinesterase activities. *Buxus natalensis* is a rare member of this family, found exclusively in South Africa. Our recent chemical studies on this plant resulted in the isolation of several new steroidal bases, for instance compounds **1** and **2**. In this presentation, structure elucidation of these compounds with the aid of NMR spectral studies and their bioactivities will be discussed.



Kimberly Pohl—*Joint Master's Program in History: Structured Space(s), Structured Identities: Oblate and Metis Contact in Saint-Laurent, Manitoba 1868-1948*. In keeping with the theme of Aboriginals and Newcomers in Encounter and the role of missionaries as agents of cultural change, this paper explores the power relations imbued in the Oblate mission compound and the Metis dwellings already present in the settlement of Saint-Laurent, Manitoba. In the context of identity formation and assertion, the mission grounds were exemplar of a European attempt to create a model French village among local Metis and Native settlers during the latter half of the nineteenth century. The entire complex - originally designed and erected to convey a sense of presence, order, and permanence - ironically no longer exists. What remains are several generational Metis log homes from the same time period. These houses are of Red River construction and are a rare find in Manitoba today.

Maria de Guadalupe Serrano Diez—*English with a Focus in Cultural Studies Program: Approaching, Embracing and Dialoguing with the Native Skin - Western and Aboriginal Canadians share the same land and dignity*. In the Era of Post Colonialism we still can hear the marked difference between Aboriginal and White Canadians. As Julia Emberly suggested in her work, Aboriginal children in the 1950's were subjects of scientific experimentation. Through my close analysis of "Skin: An Assemblage on the Wounds of Knowledge, the Scars of Truth, and the Limits of Power" (Emberly) and *Eating Skin* (Probyn), as well as recurring to a brief storytelling performance and images display that illustrate the tension relationships that sadly exist between western societies and aboriginal cultures, I will present an approach to dialogue the Other Skin, the Native Skin as one human skin. The concept "eating skin" refers to the understanding, acceptance and respect of the "other. I aim this exposition will opens doors to the dialogue and interchanging of values on the same level of Dignity between Western and Aboriginal Societies.

Siavash Darbandi—*BioScience, Technology & Public Policy Program: A Comparative Study of Ryanodine Receptors (RyRs) Gene Expression in Basal Ray-Finned Fish, Bichir (*Polypterus ornatipinnis*) and the Derived Euteleost Zebrafish (*Danio rerio*)*. Ryanodine receptors (RyRs) are large homotetrameric proteins that mediate the release of intracellular stores of calcium. Mammals possess three gene copies, RyR1, RyR2, and RyR3 that are expressed differentially. Teleost express RyR1a and RyR1b genes in slow twitch and fast twitch skeletal muscle fibers respectively. A survey of the genome of bichir (*Polypterus ornatipinnis*), considered the most basal ray-finned fish, for its RyR genes revealed that bichir genome encodes four RyR genes, RyR1a, RyR1b, RyR2, and RyR3 that phylogenetically cluster with their vertebrate orthologues. Quantitative real-time PCR shows fibre-type specific expression of the RyR1a and RyR1b genes. The RyR3 gene, however, is down regulated in bichir in contrast to derived teleost including zebrafish in which the RyR1 and RyR3 genes are co-expressed at equivalent levels. Succinate dehydrogenase staining revealed that zebrafish (*Danio rerio*) possesses greater concentration of red muscle than bichir which could contribute to the diversification of teleost lineage.



Madduma Wellalage Buddhika Prasanga—*Applied Computer Science & Society Program*: **Content Based Image Retrieval**. Efficient and effective retrieval techniques of images are desired because of the explosive growth of digital images. Content-based image retrieval is a promising approach because of its automatic indexing and retrieval based on their semantic features and visual appearance. The similarity of images depends on the features representation and feature dissimilarity function. The research is mainly addressed for a fundamental problem in content based image retrieval. That is semantic gap. In other word gap between the low-level visual features (textures, colors, shape) automatically extracted and the high-level concepts that users normally search for (tumours, abnormal tissues in medical images). Fuzzy –Rough hybrid data classification algorithm is used to reduce the semantic gap in content based image retrieval. The reason is Fuzzy and Rough-set classifiers are excellent to handle uncertain conditions and able to produce reliable result by working with partial information.



Jennifer Keith—*Aboriginal Governance Program*: **Gonàowòd – Tłı̨chǫ Self-determination & Language**. One means of achieving Indigenous peoples vision of self-determination is through laws and jurisdictional authority. Some Indigenous Nations in Canada are currently implementing self-government agreements as a means of exercising their inherent right of self-determination. My research explores the Tłı̨chǫ Agreement, a modern-day treaty between the Tłı̨chǫ Dene, the Government of Canada and the Government of the Northwest Territories. I am concerned with the potential for the Tłı̨chǫ to foster self-determination, based on their vision, in ways that have integrity and cultural continuity. I will assess the potential to codify the Tłı̨chǫ vision of self-determination within the terms of the agreement. This paper will introduce some key terms related to the Tłı̨chǫ vision of self-determination, demonstrate how they are reflective of their unique worldview, the values that are embodied in the vision and offer preliminary observations about the degree to which these concepts are operationalized in the Tłı̨chǫ Agreement.

Vignesh Sundararajan—*BioScience, Technology & Public Policy Program*: **Spermatogenesis gene expression disruption contributing to male sterility in *Drosophila* hybrids**. Hybrid male sterility is a result of post-zygotic reproductive isolation that prevents gene flow between closely related species. Spermatogenesis is the biological process where a single germline stem cell undergoes sequence of divisions, proliferations and morphological changes to become several motile sperms. Previous whole genome expression studies in *Drosophila* hybrid males have reported that most misregulated genes were mainly involved in spermatogenesis and the pathway were disrupted after meiosis. The objective of our research is to verify whether gene expression misregulation in hybrid spermatogenesis is strictly post-meiotic using “candidate gene approach”. Our candidate gene expression assay results show that gene misregulation is not post-meiotic but shared across all stages of spermatogenesis. Downregulation of these genes contributes to hybrid male sterility which supports an earlier hypothesis that gene products are shared between the dividing sperm cells through interconnected cytoplasmic bridges.

Kendra Magnusson—*English with a Focus in Cultural Studies Program*: **Disney’s *The Princess and the Frog*: A Frog Prince Narrative for a Pseudo-modern Disney**. Disney’s folktale adaptation *The Princess and the Frog* is a unique departure from mainstream representations of “The Frog Prince.” As Jack Zipes has argued, the narrative’s perseverance from folktale, to canonical text, to its usage in popular discourse confirms its stability as cultural meme. From Anne Sexton’s poetry to Seth MacFarlane’s *Calvacade of Cartoon Comedy*, “The Frog Prince” exists in multiple mediations. Although Disney’s folktale-to-film productions are often criticized for stagnating alternative cultural production, *The Princess and the Frog* does not set the standard against which all other versions will be measured. It does, however, provide a unique opportunity to evidence Disney’s role as a cultural producer. Against a backdrop of traditional texts and alternative readings of frog-prince narratives, my analysis uncovers the ideologies promoted by modern-day Disney. The film’s ideological implications demonstrate how Disney interprets audience expectations and, in particular, contemporary romance.