THE UNIVERSITY OF WINNIPEG

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DISCOVER · ACHIEVE · BELONG

The University of Winnipeg's Seventh Annual Graduate Students Research Colloquium & Second Annual Three-Minute Thesis Competition

April 10, 2015: 1L06 & 1L08

Schedule of Events

8:30AM - 9:15 AM: Registration & Coffee (1L06)
9:20 AM: Opening Greetings & Instructions—Dr. Neil Besner
9:30 AM – 12:00 PM: Oral Presentations
10:30 AM – 11:00 AM: Poster Presentations & Coffee Break
12:00 - 1:00 PM: Lunch
1:00 – 1:30 – keynote speaker, Alain Beaudry, ERDE Alumnus
1:30: 3MT Competition
Prize Presentations

ORAL PRESENTATION SCHEDULE

9:30	Mamneet Manghera	1L06
9:30	Shy Huang	1L08
9:50	Heba Abd El Hamid	1L06
9:50	Kaitlyn Duthie-Kannikkatt	1L08
10:10	Vanessa Nunes	1L06
10:10	Kanwarpreet Kaur	1L08
11:00	Samah Alsaadi	1L06
11:00	Joanne Zuk	1L08
11:20	Heather Patrick	1L06
11:20	Richard Stecenko	1L08
11:40	Daniel Ikenna Udenwobele	1L06

POSTER PRESENTATION SCHEDULE

10:30—11:00	Mahsa Hooshmandi
10:30– 11:00	Kumudu Jayarathne

Judges:

Jeff Martin, Canada Research Chair in Fundamental Symmetries in Subatomic Physics
Evelyn Peters, Canada Research Chair in Inner-City Issues, Community Learning and Engagement
Christopher Wiebe, Canada Research Chair in Quantum Materials Discovery
Dawn Sutherland, Canada Research Chair in Science Education in Cultural Contexts

Julia Lawler—BioScience, Technology & Public Policy: **Manitoba's Community Timber Allocations: An Opportunity for Increased Aboriginal Involvement?** Government and industry interests have historically dominated the forest sector in Canada, and resulted in the exclusion of Aboriginal peoples from natural resource decision-making and benefits. Aboriginal-held forest tenures are one venue for increasing involvement in forestry decision-making and enhancing social and economic benefits. In Manitoba, short-term community timber allocations are currently held by 17 First Nation, Métis, and northern communities. Although these awards present an opportunity for increased Aboriginal involvement, no scholarly attention has been paid to the outcomes of this program and its possible significance to elevating Aboriginal engagement in forestry. Using a community-based approach, this research will determine whether the community timber allocations present an effective way to increase Aboriginal involvement in forestry and identify the outcomes and significance of the program. Key-informant interviews will be used to assess to what degree the program enables decision-making control and local benefits to participating Aboriginal communities.

Adel Compton—*Theology:* **What Winnipeg Needs Right Now: An Emerging Aboriginal Young Adult Co-Creative Leadership Model.** Who gathers their community every week to create safety and non-violence? Aboriginal Youth Opportunities (AYO). Where do they gather? Every Friday evening a megaphone and bell ringing announce the weekly Meet Me at the Bell Tower (MMBT) event at the corner of Selkirk and Powers. What difference does it make? In a city MacLean's tags as the most racist in Canada, young Aboriginal leaders are creating safe space for Winnipeg's North End. They see new possibilities for Aboriginal children and youth. They partner with others to make positive outcomes happen. And, it's working. Crime rates have been dropped. North End spirit is rising. What can MMBT teach Winnipeg? Aboriginal youth leaders demonstrate the power of love to encourage non-violence. They model the strength of compassion and respect for all our neighbours as the way of hospitality, the way forward for Winnipeg.

Special Thanks:

Colloquium and 3MT Planning Committee:

Daniel Ikenna Udewobele, Gagandeep Singh, Julia Lawler, Araia Kidane, Parth Bramhbhatt, Alexander Paterson

Moderators:

Gagandeep Singh, Mahsa Hooshmandi, Aditya Bharadwaj, Aqeel Awais

We look forward to seeing you again next year!

Daniel Ikenna Udenwobele—*BioScience, Technology & Public Policy:* **Unraveling the Prognostic Potential of N myristoyltransferase (NMT) in Breast Tumors.** PI3K mediates estrogen independent activation of DNA transcription, activation of PI3K/Akt/mTOR pathway has been suggested as a mechanism for endocrine resistance in breast tumors. Metformin has been shown to activate AMPK with resultant inhibition of mTOR. Research in our laboratory has shown that an invariant consequence of Akt over expression in HepG2 cells is 50% reduction in NMT activity. Thus, establishing a crosstalk between PI3K/Akt/mTOR/AMPK pathway and NMT mediated signaling. Our preliminary data indicates that NMT is negatively regulated by mTOR. I propose to investigate PI3K/Akt/mTOR/AMPK pathway to unravel the prognostic potential of NMT in estrogen receptor alpha positive breast cancer. Metformin will be used to inhibit mTOR in breast cancer cell lines and the expression profiles of the various mediators in the pathway will be analyzed by Western blotting, immunofluorescence, FACS, qRT-PCR and Western blotting. Data from my in-vitro model will be characterized by immunohistochemical analysis of patient's samples.

Saima Siddiqui—*Indigenous Governance:* **Neo-liberal restructuring and impacts on Aboriginal services: Exploring the prospects for indigenous service delivery model for urban-Aboriginal women in Winnipeg.** One of the bi-products of neoliberal restructuring has been the growth of private, non-government and other third sector organisations (independent; volunteer etc) as delivery agent for social welfare services. For indigenous communities across Canada, the supports and assistance is through government/public funding and partnership with Aboriginal agencies, which have mostly been operated by indigenous women as frontline staff, managers, political and community activists and volunteers. Literature identified, over the years, several challenges due to neoliberal welfare restructuring in shape of reduced federal funding; change in programme priorities; absence of "culturally-appropriate" services; status-blind programmes; lack of access to services due to geographical location of communities. Combining critical feminist and indigenous perspectives, this study further explores the service delivery infrastructure in Winnipeg through responses of Aboriginal women providers to understand the extent to which barriers in social welfare reforms have been influence by colonialism, neoliberal governmentality, power/race/gender relations, oppression and marginalisation. Moreover, how

The Three Minute Thesis Competition will take place in room 1L06.

1:30PM

Mahsa Hooshmandi—BioScience, Technology & Public Policy

Gagandeep Singh—Applied Computer Science & Society

Kumudu Jayarathne—BioScience, Technology & Public Policy

Heba Abd El Hamid—Peace and Conflict Studies

Kanwarpreet Kaur—Applied Computer Science & Society

Mamneet Manghera—BioScience, Technology & Public Policy

Tanis Kolisnyk—Theology

Samah Alsaadi—BioScience, Technology & Public Policy

Shy Huang—Applied Computer Science & Society

Daniel Ikenna Udenwobele—BioScience, Technology & Public Policy

Saima Siddiqui—Indigenous Governance

Julia Lawler—BioScience, Technology & Public Policy

Adel Compton—Theology

Judges:

Annette Trimbee, President & Vice-Chancellor, The University of Winnipeg
Scott Sinclair, Assistant Deputy Minister, Advanced Learning Division
Terry McLeod, CBC/RadioOne Host

ORAL PRESENTATIONS ROOM 1106

9:30AM Mamneet Manghera—*BioScience, Technology & Public Policy*: **Silent no more: Augmented IFNγ signaling re-activates Human Endogenous Retrovirus-K.** Retroviral-derived sequences called human endogenous retroviruses (ERVs) comprise a large proportion of the human DNA. Re-activation of the youngest endogenous retrovirus, ERVK, has been implicated in the neuropathology of Amyotrophic Lateral Sclerosis (ALS). Unfortunately, the signals that re-activate ERVK remain unclear. ALS is marked by augmented levels of the pro-inflammatory cytokine Interferon-γ (IFNγ), which is a potent activator of HIV – another retrovirus. Using real-time polymerase chain reaction and western blot, we show for the first time that IFNγ enhances ERVK gene transcription, polyprotein expression, and promotes cleavage of the polyprotein into reverse transcriptase (RT) subunits in human astrocytic and neuronal cell lines. This coincides with an increase in cellular RT enzymatic activity. Fluorescent imaging further reveals markedly enhanced cytoplasmic, perinuclear, and nuclear RT staining in IFNγ stimulated cells. These newly established in vitro models of ERVK re-activation will permit further examination of ERVK biology in the context of neuroinflammatory disease.

9:50 AM Heba Abd El Hamid—*Peace and Conflict Studies:* **The Normalization of Sexual Harassment Within the Street of Cairo.** This paper shall examine under what conditions women experience sexual harassment within public space in Cairo prior and post the 2011 Revolution, at a cross-generational level. Throughout the past three decades sexual harassment has increased drastically within Cairo, with little focus on its implications. Existing scholarship examine issue of sexual harassment within the workplace or academia, however little is written about sexual harassment within public spaces. Thus the purpose of this research is to understand how different generations of Egyptian women have experienced street safety and its contributing factors. Research findings are based on semi-structured interviews with women who have lived under different Egyptian regimes and ethnographic studies of women participation in public space. The broader implication of this research is that it helps to understand critical issues hindering women's participation in society, women's rights and development, and will attempt to fill a gap within literature on sexual harassment.

Tanis Kolisnyk—*Theology*: **Indigenous Anglicans in Canada: A New Agape and the Path to Self-Determination.** The encounter between Indigenous peoples and settlers in North America is rife with challenges, missed opportunities, and marred by colonial domination. The Anglican Church of Canada is part of this history and is working to find ways forward in healing and reconciliation for Indigenous and Non-Indigenous Anglicans. The journey toward self-determination of Indigenous Anglicans within the present structure of the Anglican Church of Canada has not been without struggles and decades of work to reach new goals. What are the internal and external barriers that are impeding self-determination of Indigenous Anglicans in the Anglican Church of Canada? The path to self-determination is reviewed in chronological order, with reference to a variety of church documents including A New Agape, outcomes from Sacred Circle gatherings, interviews with ACIP members, and exploration of new pathways in Anglican Indigenous leadership development.

Samah Alsaadi—*BioScience, Technology & Public Policy :* **Detection of Human Endogenous Retrovirus-K by Retinoic Acid Inducible Gene – I.** 8% of our DNA contains retroviral sequences called human endogenous retroviruses. Enhanced expression of human endogenous retrovirus-K (ERVK) has been implicated in the pathology of several neurodegenerative diseases. The recognition of ERVK RNA by intracellular viral RNA sensors, particularly RIG-I, may trigger an innate immune response, thus contributing to neuropathology. To determine whether ERVK RNA induces an innate immune response, human astrocytic and neuronal cell lines will be transfected with i) ERVK RNA isolated from ERVK virions produced by NCCIT cell line, and ii) synthetic ERVK RNA. Q-PCR and western blot techniques will be used to measure the production of IFNβ and IRF3 – key effectors of RIG-I signaling. To further validate our results, RIG-I will be silenced in astrocytes and neurons using shRNA technology; we expect that this should diminish the innate immune response against ERVK RNA. These findings may illustrate an association between ERVK re-activation and inflammatory neuropathology.

Qianjia (Shy) Huang—*Applied Computer Science & Society:* **Cyber Bullying Detection Using Social Networks Analysis.** Cyberbullying is an important social challenge that takes place over a technical substrate. Thus it has attracted research interest across both computational and social science research communities. The social science studies conducted via careful participant selection have shown the effect of personality, social relationships, and psychological factors on cyberbullying. Computational approaches on the other hand have defined multiple automated text-based models for detecting cyberbullying. Unifying the two perspectives, this research investigates a holistic (social + text) approach for understanding and detecting cyberbullying. By analyzing the social relationship graph between users in an online social network and deriving features such as number of friends, network embeddedness, and relationship centrality, we find that: (1) multiple social characteristics are statistically different between the cyber bullying and non-bullying groups, thus supporting the results found in previous psychological studies; and (2) analyzing such social network features can yield significant improvements for the cyberbullying detection models.

Kanwarpreet Kaur—*Applied Computer Science & Society:* **Measuring the nearness of layered flow graphs: Application to Content Based Image Retrieval.** Rough set based flow graphs represent the mathematical flow of information for a given data set where branches of these could be constructed as decision rules. However, in the recent years, the concept of flow graphs has been applied to perceptual systems where they play a vital role in determining the nearness among disjoint sets of perceptual objects. The flow graph layer order is determined by the order of probe functions, and the nodes of the flow graph serve as real valued probe functions for a given feature. In our research, we have provided a practical implementation of flow graphs induced by a perceptual system, defined with respect to digital images, to perform Content-Based Image Retrieval. Results are generated using the SIMPLicity dataset, and our results are compared with the tolerance nearness measure.

Mamneet Manghera—*BioScience, Technology & Public Policy*: **Silent no more: Augmented IFNγ signaling re-activates Human Endogenous Retrovirus-K.** Retroviral-derived sequences called human endogenous retroviruses (ERVs) comprise a large proportion of the human DNA. Re-activation of the youngest endogenous retrovirus, ERVK, has been implicated in the neuropathology of Amyotrophic Lateral Sclerosis (ALS). Unfortunately, the signals that re-activate ERVK remain unclear. ALS is marked by augmented levels of the pro-inflammatory cytokine Interferon-γ (IFNγ), which is a potent activator of HIV – another retrovirus. Using real-time polymerase chain reaction and western blot, we show for the first time that IFNγ enhances ERVK gene transcription, polyprotein expression, and promotes cleavage of the polyprotein into reverse transcriptase (RT) subunits in human astrocytic and neuronal cell lines. This coincides with an increase in cellular RT enzymatic activity. Fluorescent imaging further reveals markedly enhanced cytoplasmic, perinuclear, and nuclear RT staining in IFNγ stimulated cells. These newly established in vitro models of ERVK re-activation will permit further examination of ERVK biology in the context of neuroinflammatory disease.

10:10 AM Vanessa Nunes—*Cultural Studies* : **The Filmmaker as the Mad Scientist: Tim Burton's *Frankenweenie*.** In Tim Burton's *Frankenweenie* (2012), Victor Frankenstein is a boy who uses lightning to bring his dog back to life. The film draws on both the legacy of Mary Shelley's *Frankenstein* and Burton's relationship with his childhood dog. As a patchwork honoring monster movies from the past, *Frankenweenie* is a kind of Frankenstein's creature, which raises the question of whether Tim Burton is a mad scientist himself. To build my argument that *Frankenweenie* blurs boundaries between the figures of the mad scientist and the filmmaker, I explore the film's use of stop-motion, a cinematic technology that literally brings puppets to life. My take is that *Frankenweenie* is about a fictional boy who is a mad scientist as much as it is also about a successful filmmaker immortalizing his childhood dog on screen – like a mad scientist himself.

11:00 AM Samah Alsaadi—*BioScience, Technology & Public Policy :* **Detection of Human Endogenous Retrovirus-K by Retinoic Acid Inducible Gene – I.** 8% of our DNA contains retroviral sequences called human endogenous retroviruses. Enhanced expression of human endogenous retrovirus-K (ERVK) has been implicated in the pathology of several neurodegenerative diseases. The recognition of ERVK RNA by intracellular viral RNA sensors, particularly RIG-I, may trigger an innate immune response, thus contributing to neuropathology. To determine whether ERVK RNA induces an innate immune response, human astrocytic and neuronal cell lines will be transfected with i) ERVK RNA isolated from ERVK virions produced by NCCIT cell line, and ii) synthetic ERVK RNA. Q-PCR and western blot techniques will be used to measure the production of IFNβ and IRF3 – key effectors of RIG-I signaling. To further validate our results, RIG-I will be silenced in astrocytes and neurons using shRNA technology; we expect that this should diminish the innate immune response against ERVK RNA. These findings may illustrate an association between ERVK re-activation and inflammatory neuropathology.

11:20 AM Heather Patrick—*Religion*: **"Who am I, indeed?" - Wei Hui's *Shanghai Baby* and the unfixing of the modern self.** In *Shanghai Baby*, Wei Hui draws attention to the way(s) in which the modern 'self' is constituted. Here, fiction becomes a vehicle in and through which identity is mimicked and *inscribed*, compelling us to ask: "What is the locus of the self? Am I simply the sum of the characters I create and portray?" As Wei Hui encodes ontological uncertainty in narrative form, her novel both affirms and contests the history to which it responds. At the heart of her work is an acute awareness of the 'unfixing' of the self in modernity—an unfixing precipitated by internal socio-economic forces, post-Mao reforms, and the influx of capitalism and Western ideology in China. As Wei Hui unmasks, this unfixing is characterized by profound consumer restlessness and is fueled and sustained by dependence upon established/performed gender norms and on an (as yet) unexamined faith in the authenticity of a newly fashionable expressivism.

11:40 AM Daniel Ikenna Udenwobele—*BioScience, Technology & Public Policy:* **Unraveling the Prognostic Potential of N myristoyltransferase (NMT) in Breast Tumors.** PI3K mediates estrogen independent activation of DNA transcription, activation of PI3K/Akt/mTOR pathway has been suggested as a mechanism for endocrine resistance in breast tumors. Metformin has been shown to activate AMPK with resultant inhibition of mTOR. Research in our laboratory has shown that an invariant consequence of Akt over expression in HepG2 cells is 50% reduction in NMT activity. Thus, establishing a crosstalk between PI3K/Akt/mTOR/AMPK pathway and NMT mediated signaling. Our preliminary data indicates that NMT is negatively regulated by mTOR. I propose to investigate PI3K/Akt/mTOR/AMPK pathway to unravel the prognostic potential of NMT in estrogen receptor alpha positive breast cancer. Metformin will be used to inhibit mTOR in breast cancer cell lines and the expression profiles of the various mediators in the pathway will be analyzed by Western blotting, immunofluorescence, FACS, qRT-PCR and Western blotting. Data from my in-vitro model will be characterized by immunohistochemical analysis of patient's samples.

Kumudu Jayarathne— *BioScience, Technology & Public Policy:* **Phosphorus release from surface and sub-surface Manitoba soils under prolonged flooding.** Reduced conditions resulting from flooding often lead to an enhanced release of phosphorus (P) from soils to overlying water. In a laboratory study using soils collected from flood-prone areas of Manitoba, we compared the magnitude of P released from 12 surface and 12 sub-surface soils under reduced conditions. Soil redox potential (Eh) and concentration of dissolved reactive phosphorus (DRP) in floodwater were measured weekly for eight weeks under simulated flooding. Soil redox potential values varied between +500 and +300 mV initially and dropped to +85 to -100 mV with flooding. Initial DRP concentration in floodwater varied between 0.05-0.3 mgL^{-1} and significantly increased up to 0.5-1.7 mgL^{-1} in ten surface soils. In contrast, DRP concentrations in floodwater increased with flooding in only three sub-surface soils. Results suggest that removing surface soil and exposing sub-surface soil during land reclamation or wetland restoration would be effective in minimizing P loading into fresh water.

Heba Abd El Hamid—*Peace and Conflict Studies:* **The Normalization of Sexual Harassment Within the Street of Cairo.** This paper shall examine under what conditions women experience sexual harassment within public space in Cairo prior and post the 2011 Revolution, at a cross-generational level. Throughout the past three decades sexual harassment has increased drastically within Cairo, with little focus on its implications. Existing scholarship examine issue of sexual harassment within the workplace or academia, however little is written about sexual harassment within public spaces. Thus the purpose of this research is to understand how different generations of Egyptian women have experienced street safety and its contributing factors. Research findings are based on semi-structured interviews with women who have lived under different Egyptian regimes and ethnographic studies of women participation in public space. The broader implication of this research is that it helps to understand critical issues hindering women's participation in society, women's rights and development, and will attempt to fill a gap within literature on sexual harassment.

Mahsa Hooshmandi— *BioScience, Technology & Public Policy:* **A GIS Based Habitat Suitability Model for Poweshiek Skipperling (*Oarisma poweshiek*) in Manitoba: Focus on Microhabitat Characteristics.** Field research is in progress in the Tall Grass Prairie Preserve in southeastern Manitoba to develop a habitat suitability model for the endangered Poweshiek skipperling, *Oarisma poweshiek* (PS). Twelve study sites were characterized based on adult skipperling density and classified into three categories (high, medium and low). Within each site microsite plots were established where PS adults have been observed landing, basking, nectar feeding or egg laying. Within each plot vegetation was inventoried and soil samples were collected to analyze EC, P, N, Mg, compaction, soil moisture, ph, OM, Ca, and soil texture. In addition each plot was assessed for % bare ground, depth of duff layer and distance to shrubs, trees, and swamps. Soil and vegetation data will be placed in GIS layers and combined to develop a ranking system that will be incorporated in a model to predict which sites provide optimal habitat for PS.

Gagandeep Singh—*Applied Computer Science & Society:* **Graph reachability query over large graphs.** The Growing popularity of graph databases has created problems for researches to handle large amounts of data. One such problem is label constraint reachability queries. Practical applications of reachability queries are finding relations among people in social network or defining the pathway of conversion from one compound to another in bioinformatics, etc. One solution to this problem is store the reachability and path label information between every two nodes of the graph. Second solution is to follow all paths from the source to the destination or until we reach the end of the search process. In large graphs, the former need a large memory to store the information and the latter has a huge running time. In my thesis we try to figure a solution which stands between these two approaches. We bought the search space to a constant cost at the expense of some memory cost.

ORAL PRESENTATIONS ROOM 1L08

9:30 AM Qianjia (Shy) Huang—*Applied Computer Science & Society:* **Cyber Bullying Detection Using Social Networks Analysis.** Cyberbullying is an important social challenge that takes place over a technical substrate. Thus it has attracted research interest across both computational and social science research communities. The social science studies conducted via careful participant selection have shown the effect of personality, social relationships, and psychological factors on cyberbullying. Computational approaches on the other hand have defined multiple automated text-based models for detecting cyberbullying. Unifying the two perspectives, this research investigates a holistic (social + text) approach for understanding and detecting cyberbullying. By analyzing the social relationship graph between users in an online social network and deriving features such as number of friends, network embeddedness, and relationship centrality, we find that: (1) multiple social characteristics are statistically different between the cyber bullying and non-bullying groups, thus supporting the results found in previous psychological studies; and (2) analyzing such social network features can yield significant improvements for the cyberbullying detection models.

9:50 AM Kaitlyn Duthie-Kannikkatt—*Master's in Development Practice*: **Canada's Emerging Seed Regime and the Future of Canadian Food Sovereignty.** On November 24th, 2014, the Agricultural Growth Act passed its third reading in Canadian parliament. Highly criticized by Canadian farmers, the Act threatens to place severe limits on the rights of farmers to save, reuse, exchange, and sell their seed on their terms. Aligning Canada with the latest version of the International Convention for the Protection of New Varieties of Plants (UPOV 91), this Act is the latest example of an emerging seed regime that prioritizes creating conditions for corporate profit over the protecting the rights of farmers, gardeners, and other traditional producers. This paper argues that the future of small scale agriculture, biodiversity, and food sovereignty in Canada relies on a reorientation of public policy towards protecting the rights of small scale producers. It examines Canada's current and forthcoming seed laws and their impact, both current and potential, on the future of Canadian small-scale farming.

10:10 M Kanwarpreet Kaur—*Applied Computer Science & Society:* **Measuring the nearness of layered flow graphs: Application to Content Based Image Retrieval.** Rough set based flow graphs represent the mathematical flow of information for a given data set where branches of these could be constructed as decision rules. However, in the recent years, the concept of flow graphs has been applied to perceptual systems where they play a vital role in determining the nearness among disjoint sets of perceptual objects. The flow graph layer order is determined by the order of probe functions, and the nodes of the flow graph serve as real valued probe functions for a given feature. In our research, we have provided a practical implementation of flow graphs induced by a perceptual system, defined with respect to digital images, to perform Content-Based Image Retrieval. Results are generated using the SIMPLicity dataset, and our results are compared with the tolerance nearness measure.

11:00 AM Joanne Zuk— *Public Administration:* **Perfect Pair of Better as Just Friends: Is the Public Service Ready for Lean Leadership?** Government is seeking a committed relationship with a partner that will be there to support its goals to become more efficient and effective, and improve its ability to deliver value to clients and taxpayers. Although it has flirted with private-sector approaches in the past, it is possible Lean management could be the one. Through the consideration of four factors: customer focus, decision-making culture, leadership, and strategic processes, this paper argues Lean philosophy is ultimately incompatible with the institutional traditions of Canadian governments. While government can learn from Lean, the two are better off remaining just friends.

11:20 AM Richard Stecenko— *Indigenous Governance:* **Panopticon and synopticon: Who gets to say what to whom.** In 2013, the First Nations Financial Transparency Act received royal assent. The Act requires that First Nations provide Aboriginal Affairs and Northern Development Canada with audited financial statements, which are then posted to AANDC web site. Almost all First Nations have complied and filed the statements for year ending March 31, 2014. It's a simple matter to write a program to download all these statements. While it is too early to observe changes in attitude or action, it is possible drawing on genre analysis and the Michel Foucault's ideas of governmentality to speculate on effects. The presentation will consider how revealing the financial statements to public gaze may affect progress toward self-determination in the areas of education and land title.

10:30 AM Mahsa Hooshmandi— *BioScience, Technology & Public Policy:* **A GIS Based Habitat Suitability Model for Poweshiek Skipperling (*Oarisma poweshiek*) in Manitoba: Focus on Microhabitat Characteristics.** Field research is in progress in the Tall Grass Prairie Preserve in southeastern Manitoba to develop a habitat suitability model for the endangered Poweshiek skipperling, *Oarisma poweshiek* (PS).Twelve study sites were characterized based on adult skipperling density and classified into three categories (high, medium and low). Within each site microsite plots were established where PS adults have been observed landing, basking, nectar feeding or egg laying. Within each plot vegetation was inventoried and soil samples were collected to analyze EC, P, N, Mg, compaction, soil moisture, ph, OM, Ca, and soil texture. In addition each plot was assessed for % bare ground, depth of duff layer and distance to shrubs, trees, and swamps. Soil and vegetation data will be placed in GIS layers and combined to develop a ranking system that will be incorporated in a model to predict which sites provide optimal habitat for PS.

10:30 AM Kumudu Jayarathne— *BioScience, Technology & Public Policy:* **Phosphorus release from surface and sub-surface Manitoba soils under prolonged flooding.** Reduced conditions resulting from flooding often lead to an enhanced release of phosphorus (P) from soils to overlying water. In a laboratory study using soils collected from flood-prone areas of Manitoba, we compared the magnitude of P released from 12 surface and 12 sub-surface soils under reduced conditions. Soil redox potential (Eh) and concentration of dissolved reactive phosphorus (DRP) in floodwater were measured weekly for eight weeks under simulated flooding. Soil redox potential values varied between +500 and +300 mV initially and dropped to +85 to -100 mV with flooding. Initial DRP concentration in floodwater varied between 0.05-0.3 mgL^{-1} and significantly increased up to 0.5-1.7 mgL^{-1} in ten surface soils. In contrast, DRP concentrations in floodwater increased with flooding in only three sub-surface soils. Results suggest that removing surface soil and exposing sub-surface soil during land reclamation or wetland restoration would be effective in minimizing P loading into fresh water.