Dr. Katherine Aitchison – Annual Report

June 2016
EXECUTIVE SUMMARY

The focus of this Chair program of research is mental illness and addictions (with a secondary focus is on suicide prevention), contributing to the vision of the Alberta Addiction and Mental Health Research Partnership Program, that Alberta should be a leader in generating and applying world-class research to improve the mental health of its population.

Leadership positions have facilitated networking on local and provincial (elected member, General Faculties Council, Faculty of Medicine and Dentistry; Executive Committee for the Alberta Psychiatric Association, Research member and Scientific Conference Co-Chair; AMA Section of General Psychiatry, Executive), national (Canadian Substance Advisory Committee; Canadian Psychiatric Association, Research Committee), and international (Psychopharmacology Committee, Royal College of Psychiatrists, UK; Society of Biological Psychiatry Women’s Leadership Group) levels.

This Chair program is comprised of translational medicine that is conducted to lead change and support evidence-based practice, resulting in health care innovations specifically, a thesis, an on-line meeting report, a book chapter, two health policy documents, and seven journal articles have been published with trainees and colleagues here in Alberta. In addition, Chair program trainees have made over 115 oral and poster presentations (including presentations with caregivers and those with lived experience as part of the Schizophrenia Society of Alberta Partnership Education Program), participated in seven other knowledge transfer activities including Alberta Innovates Health Solutions facilitated events (“Science in the Cinema” and a presentation to teachers and counselors), and made available laboratory protocols (seven coauthored) and laboratory “know-how” to colleagues. Eleven awards/recognitions have been received by trainees in the program.

The main focus of the Chair program to date has been the role of adverse childhood experiences and substance misuse to vulnerability to and onset of psychosis. The Master’s in Psychiatry thesis on delineating factors – including adverse childhood experiences - associated with vulnerability to psychosis in young people is open access on the University of Alberta website. An article summarizing the association between cannabis and psychosis is available in the Schizophrenia Society of Alberta newsletter (“Opening Minds”), December 2015 issue. Cannabis increases the chance of experiencing psychotic symptoms by 40 per cent. In collaboration with Dr. S.E. Purdon (University of Alberta) and Dr. P. Tibbo (Dalhousie University, Halifax), the program has investigated the interaction between cannabis and specific genetic variants in nearly 200 patients with psychosis. The results of this analysis were presented to the Indo-Canadian Psychiatric Association (Vancouver, October 2015, Distinguished Speaker series) and will be presented at this year’s Alberta Psychiatric Association Scientific Conference.

Several graduate students (Master’s and Doctoral) are in the Chair program, with two Postdoctoral level trainees. The program has also contributed to policy documentation (e.g., the provincial antipsychotic safety monitoring recommendations). Through innovative practice, the program has led by example: in the treatment of patients with complex comorbid mental illness and addictions, including careers in the assessment and treatment process, practicing multidisciplinary holistic care, and maintaining a high standard of record-keeping. The program has brought in national funding (Canadian Foundation for
Alberta Addiction and Mental Health Research Partnership Program

Innovation, John R. Evans Leaders Fund) to resource a new genomics infrastructure at the University of Alberta for innovative translational pharmacogenomic biomarker discovery. This has facilitated training of trainees, publications, successful completion of genotyping for a Canadian Institutes of Health Research grant, and leveraging of other funds including collaborative grants.

The Chair program is promoting and strengthening working relationships between Alberta Health Services zones, the Universities, relevant community agencies, and policy-makers. Connecting the Chair program to Alberta Health Services (AHS) has been facilitated by educational activities, for example, presentations to multidisciplinary health care professionals (such as a webinar in Early Intervention in Psychosis and a presentation to the Para-Professional Practice Council), and Grand Rounds (including those broadcast to sites around the province from the University of Alberta). A resident has been trained in Early Intervention in Psychosis, and principles for enhancing scholarly activities of residents have been collated and made available to Residency Programs across Canada. Inter-university collaborative grants involving the Chair program have been awarded (an Alberta Gambling Research Institute Major Grant to B. Lee, University of Lethbridge; and an Alberta Innovates Health Solutions Collaborative Research & Innovation Opportunities Population Resiliency Grant to D. Kingston, University of Calgary). Connection with relevant community agencies including other health care providers such as Covenant Health has occurred through participation in educational and policy development events such as those hosted by the Palix (previously Norlien) Foundation and the Institute of Health Economics (“Consensus Statement on Improving Mental Health Transitions”). The program has also connected with the government (e.g., via the Lieutenant Governor’s Circle on Mental Health and Addiction True Awards Committee). Public health work that the program has contributed to has made a significant impact on the number of lethals owing to the consumption of “ecstasy” and related drugs since 2012, and has involved liaison with the Edmonton Police Service and the Solicitor General’s Office.

A list of Dr. Aitchison’s publications is available via the ResearcherID accessible via this page: http://psychiatry.med.ualberta.ca/AboutUs/DepartmentMembers/Academic/Aitchison.aspx

**Research Overview**

**Project #1: Psychosis including the role of substance misuse in the genesis of psychosis**

**Objective(s)**

1. Replicate the finding that a variant in the gene encoding catechol-O-methyltransferase (COMT) interacts with the consumption of cannabis (prior to age 15 years) in the genesis of psychosis.

2. Investigate whether or not these findings are generalizable to other ethnic groups including First Nations peoples.

3. Extend the work to include other relevant genes and other environmental factors: adverse childhood experiences and recent adverse life events.

4. Are genetic variants in other relevant candidate genes (e.g., in the glutamate pathway) associated with increased risk of psychosis in Albertan adolescents at high risk of a psychotic disorder consuming substances of abuse?

5. Do genetic variants in relevant candidate genes (e.g., monoamine oxidase [MAO]) moderate the effects of social adversity in the genesis of psychosis in such high risk adolescents, and do these findings differ by ethnic group?
6. Are genetic variants in cytochrome P450 enzymes associated with variation in serum levels of antipsychotics and with clinical response including adverse drug reactions to antipsychotics, and do these findings differ by ethnic group?

**Description of the Project(s)**

The first five objectives of this project are being implemented by a Canadian Foundation for Innovation (CFI) grant and this Chair program equipping Dr. Aitchison’s team to conduct genetic analyses to add value to collaborative projects involving Drs. S. Purdon and P. Tibbo (formerly Edmonton, now Halifax). These projects received funding from the Faculty of Medicine and Dentistry at the University of Alberta, the Canadian Institutes of Health Research, and the Nova Scotia Health Research Fund. A graduate student has analyzed data on measures of vulnerability to psychosis in a group of “normal” high school students, and found, for example, that adverse childhood events are significantly associated with cannabis consumption. In individuals with first episode psychosis ascertained in Edmonton and Halifax, the research team has found that the COMT Val158Met variant is associated with earlier age of onset of psychosis for substance-induced psychosis (Rossolatos, Wang et al., 2015).

**Design and Methods**

Patients with a first episode of a psychotic illness have been recruited from Edmonton and Halifax. Data on cannabis use has been collected. Ethics committee approval for the analysis of anonymized archived data has been approved and the results of this presented (Purdon et al., 2014). Markers for genes relevant to the genetic vulnerability to the effects of adolescent cannabis consumption have been identified and assays run. Literature review has been conducted to determine the best candidate genes to study for an association with psychosis in addition to NPAS3 (Wang et al., 2014b).

**Outcomes and Key Findings**

In the clinical data, psychosis was associated with age of regular use of cannabis ≤19 years. There was 100% concordance between TaqMan and other SNP methodologies for available data. COMT genotype was a significant predictor of log age at diagnosis in the substance-induced psychotic disorder subsample (Aitchison et al., 2014; Rossolatos, Wang et al., 2015).

**Conclusions**

The above described association should be regarded as preliminary until clusters are factored into the analysis. The effect of COMT genotype was additive (with Val/Val being the youngest age of onset, followed by Val/Met followed by Met/Met) - in the same direction as that seen by Caspi et al. (2005). Should the association hold up, it would appear to be the first report of a GxE association between COMT and cannabis in a psychosis sample driven by the substance-induced psychosis subsample. There is evidence in recent years that the use of cannabis by young people and the potency thereof has increased. Such an association would deserve further exploration and investigation in similar datasets.

**Project #2: Genetic and pharmacogenetic association analysis in depression and anxiety**

**Objective(s)**

1. Can we replicate the finding that depressive disorder moderates the effect of the FTO gene on body mass index in depressed Albertans, and is this association generalizable across ethnic groups, including First Nations peoples?

2. Is this finding generalizable to anxiety disorders, and what is the effect of ethnic group on anxiety?
3. Are genetic variants in other relevant candidate genes (e.g., in inflammatory pathways) associated with increased cardiovascular risk in depression and anxiety disorders?

4. Can we replicate the pharmacogenetic association findings of response and adverse effects to antidepressants from GENDEP and other studies in depressed Albertans, and are the findings generalizable across ethnic groups?

5. Are the pharmacogenetic associations generalizable to other antidepressants and to anxiety disorders?

**Description of the Project(s)**

The project entitled “Pharmacogenetic translational biomarker discovery” was funded by the CFI, which has enabled investment in state-of-the-art technology including for microarray-based genotyping and copy number analysis. The Chair lab is now aiming to conduct genetic and pharmacogenetic association analysis in mental health and addictions more widely. The research team aims to contribute to the ability of the Canadian health care system to meet mental health needs by innovative genetic testing leading to individualized prescribing based on genomic profile (known as pharmacogenomics). This will reduce the time to effective treatment, and is therefore predicted to reduce the suicides and accidental deaths that are currently the most common causes of death in young people. Moreover, there will be an associated reduction in lost productivity days, i.e., a reduced economic burden to society. Genetically informed prescribing will also lead to a reduction in adverse reactions to medications, which in some cases may be fatal, and in others may lead to extensive hospitalization and other service costs.

**Design and Methods**

Genotyping for an antipsychotic-associated weight gain (Almandil et al., submitted) and opioid substitution study has been completed. Gene chip work and ground-breaking copy number analysis data from the CYP2D6 and CYP2C19 loci have been presented both locally and at international conferences (Lee et al., 2013; Slomp et al., 2013; Carvalho Henriques et al., 2014, 2015). The research team has also genotyped samples collected as part of the CIHR-funded NPAS3 study and analyzed data from this study (see above). Data has been cross-validated using a PCR-RFLP (polymerase chain reaction – restriction fragment length polymorphism) assay, and optimized a long-PCR assay for the detection of CYP2D6 variants that are undetectable using commonly used assay methods (Carvalho, Henriques et al., 2014, 2015).

**Outcomes and Key Findings**

Many oral and poster presentations have resulted from the above (see conference presentation section), papers have been published (e.g., Koola et al., 2014), and manuscripts are being drafted. In addition, Dr. Aitchison continues with her international collaborations in this area.

**Conclusions**

Genetic and pharmacogenetic association analysis has been very fruitful to date; the CFI-Innovation and Advanced Education grant is facilitating continuation of this exciting program of work by training highly qualified individuals.
Project #3: Suicide prevention

Objective(s)

1. Can we replicate genetic associations with suicidal ideation (such as found in the GENDEP study, with NTRK2 and BNDF) in Albertans with psychosis or depression, and are these associations generalizable across ethnic groups?

2. Can we replicate other clinical and biological mediators (including illicit drug, epigenetic, and metabolomic markers) of suicidality as identified in the Suicidality: Treatment Occurring in Paediatrics (STOP) project in Albertans with psychosis or depression, and are these associations generalizable across ethnic groups?

3. Will the incorporation of replicated clinical and biological associations into an improved measure of risk of suicide have clinical utility in the prevention of suicidal behaviours and of completed suicides?

Description of the Project(s)

With reference to the first objective, Dr. Aitchison has continued to contribute to relevant papers (e.g., genetic, inflammatory, and neuroimaging correlates of response to stress in depression and psychosis) arising from the GENDEP study and other collaborating projects in order to provide continued relevant background work. In the STOP project, Dr. Aitchison has co-led completion of the work by Workpackage 3 and material has been prepared for presentation and publication. Her continued international collaborations and involvement in meetings such as the Annual Pharmacogenetics in Psychiatry Meeting provide essential information regarding what associations have been replicated to date.

Together with a trainee, she hosted a pre-film introduction and post-film Q and A session (Edmonton, March 20, 2014) for “Science in the Cinema: It’s Kind of a Funny Story;” an event organized by Alberta Innovates: Health Solutions (AIHS). The presentation was addressed to the general public aiming to discuss myths and provide information on the topic of depression and suicidal ideation (information in lay terms provided to AIHS), and was associated with good uptake of information leaflets provided by Alberta Health Services.


Design and Methods

In Workpackage 3, “Establishing biological sampling methodology for investigation of mediators of suicidality,” quality control analysis was conducted on DNA (genetic material) extracted from various sample types (blood, cheek swab, and saliva). This DNA was then further investigated with different types of genotyping, including microarray technology and epigenetic analysis. Sequencing conducted on DNA extracted from saliva sampled in Alberta (Dr. G. Macintyre, L. Luoma, and Dr. S. Purdon) has been included in the paper drafted.

Conclusions

The yield of DNA from 2.5 ml of saliva processed using Oragene kit in adults is approximately half of that from a 5 ml blood sample, the quality is good and “fit for purpose,” specifically for a range of genomic applications, including single nucleotide polymorphism (SNP) analysis, variable number tandem repeat (VNTR) genotyping, long-range polymerase chain reaction (long-PCR), genotyping using microarray technology, and sequencing. Interestingly, however, more detailed recent analysis of the microarray data shows that there may be some differential result by originating tissue type (Aitchison, Curran et al., in
preparation). The research team has also shown that methylation assays are possible on saliva processed using Oragene kit with the caveat that there are tissue-specific differences in methylation. Finally, the research team has shown that for children less than 12 years old, a modified DNA extraction protocol should be employed (Gassó et al., 2014).

Methodology for the collection of DNA for genetic studies in children and adolescents has been established (including optimization of protocols for extraction of DNA from saliva and downstream processing), which should be useful for the AIHS-funded CRIO Team Grant on Population Resiliency.

**IMPLICATIONS FOR POLICY OR PRACTICE**


5. In a webinar for Alberta Health Services Addiction and Mental Health Multidisciplinary Staff entitled Early psychosis Intervention: Principles and Practice in which 111 participants participated from across the province, Dr. Aitchison outlined the benefits of early intervention in psychosis, guiding principles of care and implementation (such as the stress-vulnerability model of psychosis as described in Roper et al. under revision, “start low, go slow” regarding medication dosing, and recovery oriented practice), the potential benefits of collaborative working between Child and Adolescent Psychiatry and Adult Psychiatry, and the need to pay attention to ethnic variations in pathways into care. From the feedback received, the webinar was successful, with participants appreciating the information presented, and the direct applicability of the research to clinical services. With Dr. Aitchison’s input, this webinar has since been synthesised into a document outlining the principles and practice of early intervention in psychosis by Dr. R. Hibbard (Zone Chief, Edmonton Addictions and Mental Health), for the benefit of local clinicians. Dr. Aitchison is working on an updated version of a book she previously coauthored (Aitchison et al., 1999) in the form of a clinician’s guide to the treatment of first episode psychosis (First Episode Psychosis, a clinical guide; Shivakumar S and Aitchison KJ, to be published by Oxford University Press).

6. Four trainees each presented an Adult Psychiatry Grand Round at the University of Alberta, with good feedback.

7. In EEPIC, together with Drs. Purdon and Urichuk, the following additions to service delivery have been made: more patients have been registered with Family Physicians with consent being sought to communicate with Family Physicians and other health professionals involved in their care; salient laboratory investigations (e.g., vitamin D and EKGs) have been added to the EEPIC clinical evaluation protocol, with more attention being paid to metabolic monitoring. Relevant research papers have continued to be provided to the team and others in Alberta. Over the last year multidisciplinary clinical team meetings have continued to develop positively, have had a
greater breadth of patients being referred in terms of their ethnic background, a Clinical Psychologist has been providing cognitive behavioural therapy and family therapy to patients, and another psychiatrist has joined the team.

8. Together with a trainee and with input from Dr. Connie Prosser (Clinical Chemistry), Dr. Aitchison has provided detailed comments on the Antipsychotic Safety Monitoring Recommendation (Adult version), which have been communicated to AHS and the eClinician implementation group.

9. Dr. Aitchison provided feedback on the following AHS document for consultation: Restraint-Addiction and Mental Health, Child and Adolescent (draft, pre-consultation, February 2014).

10. Dr. Aitchison volunteered as an examiner for POSCEs at the University of Alberta, and, as part of that, provided local feedback on the Canada low risk alcohol drinking guidelines.

11. As an OSCE examiner, Dr. Aitchison provided relevant literature subsequently to the examinees.

12. Dr. Aitchison has liaised with Jeff Coulombe in regard to specific queries around building eClinician interfaces, including privacy concerns.

13. Edmonton Police Service, the Royal Canadian Mounted Police, Canadian Centre for Substance Abuse, and other relevant organisations continue to be interested in the work by Dr. Hudson and Dr. Aitchison, with exchange of information occurring between parties in order to increase the standard of community awareness. Since making presentations in which Dr. Aitchison outlined the importance of oral rehydration solutions being available at “raves” to prevent potentially lethal cerebral oedema, such solutions have been made available. Following the provision of a relevant case report and other research material, it is Dr. Aitchison’s understanding that first responders have been administering dantrolene to cases of suspected ecstasy administration in which there is increased muscle tone; this may have had a significant effect on morbidity and even mortality in such cases. This work and more conducted by many around the province appears to have been associated with a reduction in ecstasy-related fatalities since July 2012. New psychoactive substances are a growing concern; knowledge translation activities have continued in this area.

14. A book chapter entitled “Genetics and Genomics in Addiction Research” was commissioned (Handbook of Drug and Alcohol Studies, volume 2; Wolff K et al, eds.), and Dr. Aitchison is supervising trainees in drafting this.


**Knowledge Transfer Activities**

**Quality Assurance/Quality Improvement**

- Lodhi, R. J. (Audit Coordinator), Hegde, R. (PGY5 resident, mentored and supervised by Lodhi, R. J.), Aulakh, A. (Lead Physician, ODP; Section Chief, Addictions, Edmonton Zone), Aitchison, K. J. (2016). *Changing profiles of patients attending the opiate dependency program in Edmonton over the last decade.*
Other Knowledge Translation Activities


LOCAL ACTIVITIES


    - Presentation developed by Sivapalan, S., Aitchison, K. J., & Lodhi, R. J., with input from Purdon, S. E.
    - Audience was made up of members of the McDougall Police Station


   - Presentation developed by Sivapalan, S., Aitchison, K. J., & Lodhi, R. J., with input from Purdon, S. E.
   - Audience was made up of members of Edmonton Police Services (recruits)


   - Won 2nd place prize


PAN-ALBERTA COLLABORATIONS

Dr. Aitchison contributed to the successful award of the Collaborative Research & Innovation Opportunities (CRIO) Population Resiliency Grant (Prediction and Understanding of Resilience in Albertan Families: Longitudinal Study of Disaster Responses (PURLS)) to Dawn Kingston, Suzanne Tough, Sheila McDonald, and Andy Greenshaw. Through her previous visits to the University of Lethbridge, including to the Kovalchuk Laboratory as part of networking activities funded by this Chair program, she was aware of the expertise in epigenetic analysis and realized that this could be applied to clinical studies. Through prior networking in the Katz Group Center for Pharmacy and Health Research at the University of Alberta including prior grant submissions, Dr. Aitchison was also aware of the expertise of Dr. Lynne Postovit in candidate gene epigenetic analysis, and was able to facilitate linking of the Kovalchuk laboratory to Dr. Postovit and other colleagues for the CRIO application (which involves three universities in Alberta).

Together with Dr. Bonnie Lee (University of Lethbridge), Dr. Aitchison conducted site visits of addiction facilities in Alberta, ranging from community facilities to residential care. This included mutual knowledge exchange and building ground for future collaborations and connections.

In regard to the CIHR-funded CRISM Prairie Node, a trainee funded on the Chair program attended the recent node meeting in Calgary on behalf of Dr. Aitchison’s team, where he was able to continue his networking with Dr. Wild and others.

Dr. Aitchison has continued to sit on the Alberta Gambling Research Institute (AGRI) Board, and to make contributions such as furthering understanding of the process of research translation, and to be part of the AGRI Neuroscience Team. In regard to the latter, through networking within the Department of Psychiatry at the University of Alberta, she became aware of the relevance of Dr. Fujiwara’s work to gambling, and encouraged her to be part of the Team led by Darren Christensen. Dr. Fujiwara has gone on to play a leading role in subsequent correspondence and communications by the Team in preparation for grant submission.

Most recently, Dr. Aitchison was approached by Dr. McKennitt and connected him with Tara Hanson for pan-Alberta work aimed at understanding factors relevant to the prevention of suicides in First Nations communities.

NEXT STEPS FOR COLLABORATION AND DISSEMINATION

Having focused mainly on the first area (gene-environment interactions in psychosis) of the 2011 Vision Statement for the Chair Program of work plus the first part of the second area (risk factors for illness), while building capacity (including gaining funding for infrastructure, purchasing equipment, and completing training and validation) to contribute in the pharmacogenomics and suicide prevention areas, the research team is now moving forward in the area of pharmacogenomics. Dr. Aitchison has reached
out to Colin Coros of Deltagenomics at the University of Alberta, who has a more high throughput version of the gene chip technology than Dr. Aitchison’s team has, and is keen to collaborate, including working on an application to Genome Canada. She has also had an initial conversation with Genome Alberta regarding assisting with drafting an application for funding in response to the forthcoming Personalized Medicine call for applications from Genome Canada. Local psychiatrists have requested that their patients be genotyped; she has generated reporting proformas and looks forward to working with Dr. Somerville (of Genetic Laboratory Services) to pilot reporting on variants in drug metabolizing enzymes and transporters for the benefit of prescribers and their patients and families.

Anticipated impacts of the research program include improving the ability of the Canadian health care system to meet mental health needs by innovative genetic testing leading to individualized prescribing based on genomic profile. Associated benefits include a reduced economic burden to society both by reducing direct costs such as those of hospitalization as well as of indirect costs such as those due to lost productivity.

Groundwork has additionally been laid for collaborations in the area of suicide prevention, including taking on a new trainee, and making links relevant to this area for the aboriginal community.

Dr. Aitchison met with colleagues who are interested in revising for resubmission a pan-Alberta application for funding that she previously made (together with Drs. A. Hudson and G. B. Baker) in regard to stimulant abuse (which was a CRIO Team application).

Dr. Aitchison proposed a new treatment-resistant psychosis service, combining a state-of-the-art clinical service with an as yet unparalleled opportunity for training of health care professionals including residents and providing leadership in evidence-based medicine and innovations (details available on request).

As Director of Residency Research in Psychiatry at the University of Alberta, Dr. Aitchison has interfaced with other colleagues holding that position in other Canadian universities and looks forward to further interactions with such (including Dr. MacMaster at the University of Calgary) as together they seek to support resident scholarly activities in line with the new national psychiatry residency program accreditation standards.

See also, Error! Reference source not found. section.

AWARDS

- Dr. Katherine Aitchison, Alberta Centennial Addiction and Mental Health Research Chair in Mental Illness and Addictions
  - Invited by the Indocanadian Psychiatric Association to give a presentation at their Annual Meeting as a Distinguished Speaker.

OTHER COLLABORATORS


   - Presentation developed by Sivapalan, S., Aitchison, K. J., & Lodhi, R. J., with input from Purdon, S. E.
   - Audience was made up of members of the McDougall Police Station


34. Lodhi, R. J., & Aitchison, K. J. (2016, April). Bone health and antipsychotics. Presentation at the University of Alberta Adult Psychiatry Grand Rounds, Edmonton, Alberta.


   - Presentation developed by Sivapalan, S., Aitchison, K. J., & Lodhi, R. J., with input from Purdon, S. E.
   - Audience was made up of members of Edmonton Police Services (recruits)


- Won 2nd place prize


Pan-Alberta Collaborations, and **Publications** sections.
Publications

Book Chapters


Laboratory Protocols


   - Contains minor edits to the elution protocol by Aitchison, K. J.


   - [http://schizophreniabulletin.oxfordjournals.org/content/41/5/1171.long](http://schizophreniabulletin.oxfordjournals.org/content/41/5/1171.long)

   doi: 10.1007/s00213-015-3898-x, PMID: 25761838


Conference Presentations (June 2015 – June 2016):


20. Stovel, L., & Aitchison, K. J. (2015, November). *Psychiatry residency training in Canada: a University of Alberta perspective*. Presentation at the University of Alberta – China Mental Health Education Symposium, Guangzhou Brain Hospital, China.

   - Audience made up of mainly caregivers


   - Presentation developed by Sivapalan, S., Aitchison, K. J., & Lodhi, R. J., with input from Purdon, S. E.
   - Audience made up of members of the Edmonton Para-Professional Practice Council, Alberta Hospital Edmonton


   - Presentation developed by Sivapalan, S., Aitchison, K. J., Lodhi, R., & Duffy, O., with Dr. Sivapalan mentoring Dr. Duffy

   - Presentation developed by Sivapalan, S., Aitchison, K. J., & Lodhi, R. J., with input from Purdon, S. E.
   - Audience made up of members of University of Alberta nursing program

   - Presentation developed by Sivapalan, S., Aitchison, K. J., & Lodhi, R. J., with input from Purdon, S. E.
   - Audience made up of members of Addiction Services Edmonton

- Presentation developed by Sivapalan, S., **Aitchison, K. J.**, & Lodhi, R. J., with input from Purdon, S. E.
- Audience made up of MacEwan University nursing students


- Presentation developed by Sivapalan, S., **Aitchison, K. J.**, & Lodhi, R. J., with input from Purdon, S. E.
- Audience made up of members of Villa Marguerite Assisted Living


- Presentation developed by Sivapalan, S., **Aitchison, K. J.**, & Lodhi, R. J., with input from Purdon, S. E.
- Audience made up of members of Edmonton Mental Health Clinic (concurrent disorders group, mainly of those with lived experience)


- Presentation developed by Sivapalan, S., **Aitchison, K. J.**, & Lodhi, R. J., with input from Purdon, S. E.
- Audience made up of MacEwan University nursing students


- Presentation developed by Lodhi, R. J., based on a presentation developed by Sivapalan, S., **Aitchison, K. J.**, & Lodhi, R. J., with input from Purdon, S. E.
- Audience made up of members of Online Education Program (families and caregivers of patients with mental illness)


- Presentation developed by Sivapalan, S., **Aitchison, K. J.**, Lodhi, R., & Duffy, O., with Dr. Sivapalan mentoring Dr. Duffy
- Audience made up of MacEwan University nursing students


- Presentation developed by Sivapalan, S., **Aitchison, K. J.**, & Lodhi, R. J., with input from Purdon, S. E.
- Audience made up of members of the Institute for Women


- Presentation developed by Sivapalan, S., **Aitchison, K. J.**, & Lodhi, R. J., with input from Purdon, S. E.
- Audience was made up of members of the McDougall Police Station


- Won the Alberta Psychiatric Association President’s prize (first prize for resident presentations)


- Presentation developed by Sivapalan, S., Aitchison, K. J., & Lodhi, R. J., with input from Purdon, S. E.
- Audience was made up of members of Edmonton Police Services (recruits)


- Won 2nd place prize


- [http://ccnp.ca](http://ccnp.ca), [http://cdrin.org](http://cdrin.org)


**ABOUT THE ALBERTA ADDICTION AND MENTAL HEALTH RESEARCH PARTNERSHIP PROGRAM**

The Alberta Addiction and Mental Health Research Partnership Program is comprised of a broad-based multi-sectoral group, representing service providers, academic researchers, policy-makers and consumer groups, working together to improve the coordination and implementation of practice-based addiction and mental health research in Alberta.

The mission of the Research Partnership Program is to improve mental health outcomes for Albertans along identified research priority themes, by generating evidence and expediting its transfer into mental health promotion, prevention of addiction and mental illness, and innovative service delivery.

The Research Partnership Program sets out to increase Alberta’s excellence and output of addiction and mental health research findings, and to better translate these findings into practice improvements.