



Elder Albert Marshall at the workshop on Aboriginal Traditional Knowledge and the Species at Risk Act.

Two-eyed Seeing and Integrative Science

By Patricia Williams

Last October DFO and other federal employees and Aboriginal people who all work to advance the *Species at Risk Act* (SARA) gathered in Mississauga, Ontario.

They learned “to see from one eye with the strengths of indigenous knowledges and ways of knowing, and from the other eye with the strengths of Western knowledges and ways of knowing [...] and to use both these eyes together, for the benefit of all.” (Elder Albert Marshall, Eskasoni First Nation)

The objective of the workshop was to discuss the integration of Aboriginal traditional knowledge (ATK) into SARA processes. Participants—DFO, Environment Canada, Indian and Northern Affairs Canada, Parks Canada, Aboriginal organizations and First Nations—also looked into moving towards a more balanced cooperation, one in which all those concerned with protecting species at risk can jointly become informed and involved within their cultural context.

Sana Kavanagh of the University of Cape Breton and Elder Marshall collaborated to deliver an insightful presentation which framed a valuable context for the discussions. They spoke of “two-eyed seeing and integrative science.”

Aboriginal traditional knowledge (ATK) is often commonly referred to as Aboriginal TEK (traditional ecological knowledge). TEK focuses on the environment, and includes all types of knowledge about the environment derived from the experience and traditions of a particular group of people. It is a holistic process of knowledge transfer and exchange.

Two-eyed seeing calls upon us all to see twice as much as we listen; to think with two eyes; to listen for opportunities for collaboration and to show respect for, and acknowledge the power of information contained in both indigenous Aboriginal traditional knowledge and Western science’s analytical approach to resource and oceans management.

This forum was foundational in setting new directions for the continuing dialogue on how to respectfully combine the best information from both expert approaches—a call for inclusivity that acknowledges that species at risk can be better protected by tapping into different sources of knowledge.

Aboriginal cultures have long held views that align with and can be interwoven into the SARA objectives of protecting, recovering and conserving species at risk. “Two-eyed

seeing and integrative science” is an animate process; the challenge is for us to collectively and innovatively apply it to SARA processes.

Colleagues in the workshop spoke passionately about transparency of information sharing and the respectful approach to sharing, while acknowledging divergences in understanding and how working with these in mind can help all those engaged in SARA processes to better envision the scope and inclusiveness required to protect and recover species at risk.

Elder Garry Sault of the Mississaugas of the New Credit First Nation closed the meeting with his persuasive imagery of SARA as a beautiful woman and protector of the water which nourishes and sustains life. We need to protect her if we want to accomplish progress in our lives.

As Elder Sault sent the group forward with a traveling song, both he and Elder Marshall gave us all much to contemplate and reflect on in the Two-Eyed Seeing approach so well framed by the Integrative Science and Two-Eyed Seeing team’s model.

.....
Patricia Williams works as a resource manager - Aboriginal Programs and Relations, in the Fisheries and Aquaculture Management Branch, Newfoundland and Labrador Region.

Two-Eyed Seeing and Species at Risk

SARA: Aboriginal Traditional Knowledge
October 28-30, 2008
Toronto, Ontario

Albert Marshall

Elder, Eskasoni First Nation
Mi'kmaq Nation, Canada

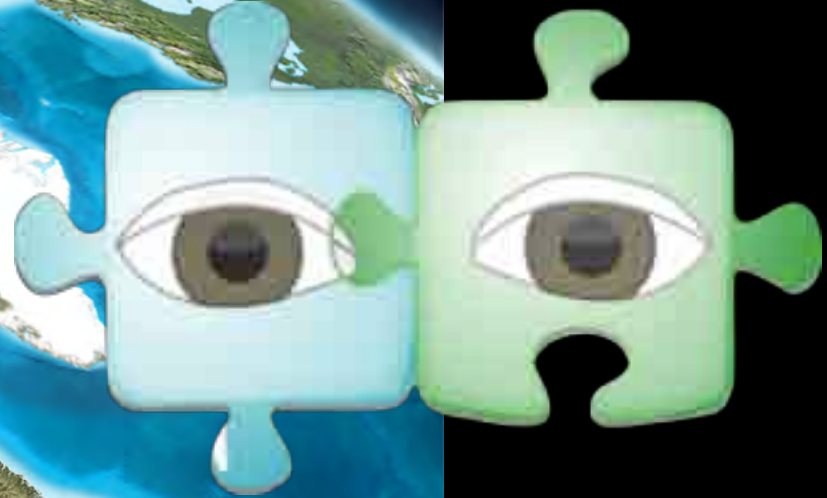


- Institute for Integrative Science & Health,
Cape Breton University
- Unama'ki Institute of Natural Resources

contact: albertmarshall@ns.sympatico.ca



Eskasoni, Unama'ki
Mi'kmaq First Nation



Canada Research Chairs / Chaires de recherche au Canada

Canada Foundation for Innovation / Fondation canadienne pour l'innovation

Canada Research Council / Conseil de recherches en sciences humaines du Canada

CAPE BRETON UNIVERSITY

CIHR IRSC / Canadian Institutes of Health Research / Instituts de recherche en santé Canada

IAPH

ABORIGINAL HEALTH RESEARCH

Mi'kmaq College Institute / Mi'kmaq Espi Kina'matno'kuom

INSTITUTE FOR INTEGRATIVE SCIENCE & HEALTH

Mi'kmaq Elders

KECCA / Knowledge, Education and Cultural Connection Association

NSERC CRSNG

Mi'kma'wey Debert

Royal Canadian Mounted Police / Gendarmerie royale du Canada

Asking the hard questions:

Are we playing the role of Creator
In how we deal with species at risk?

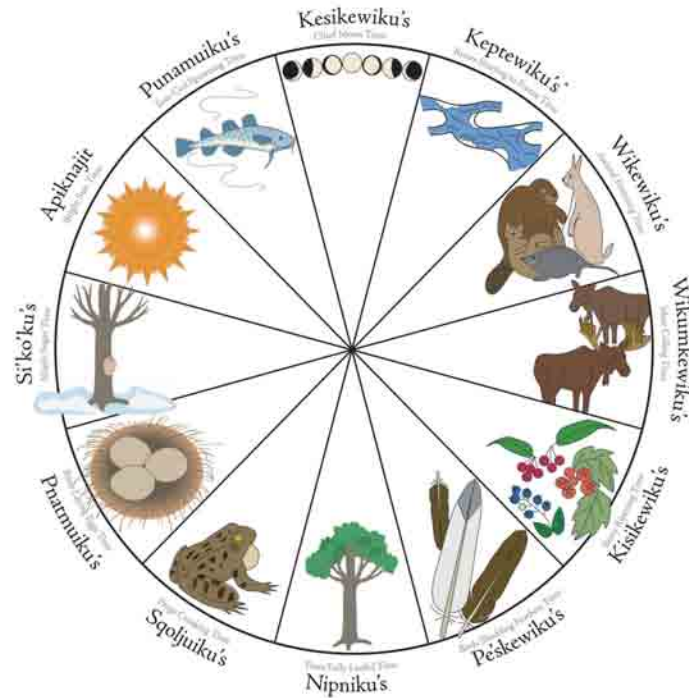


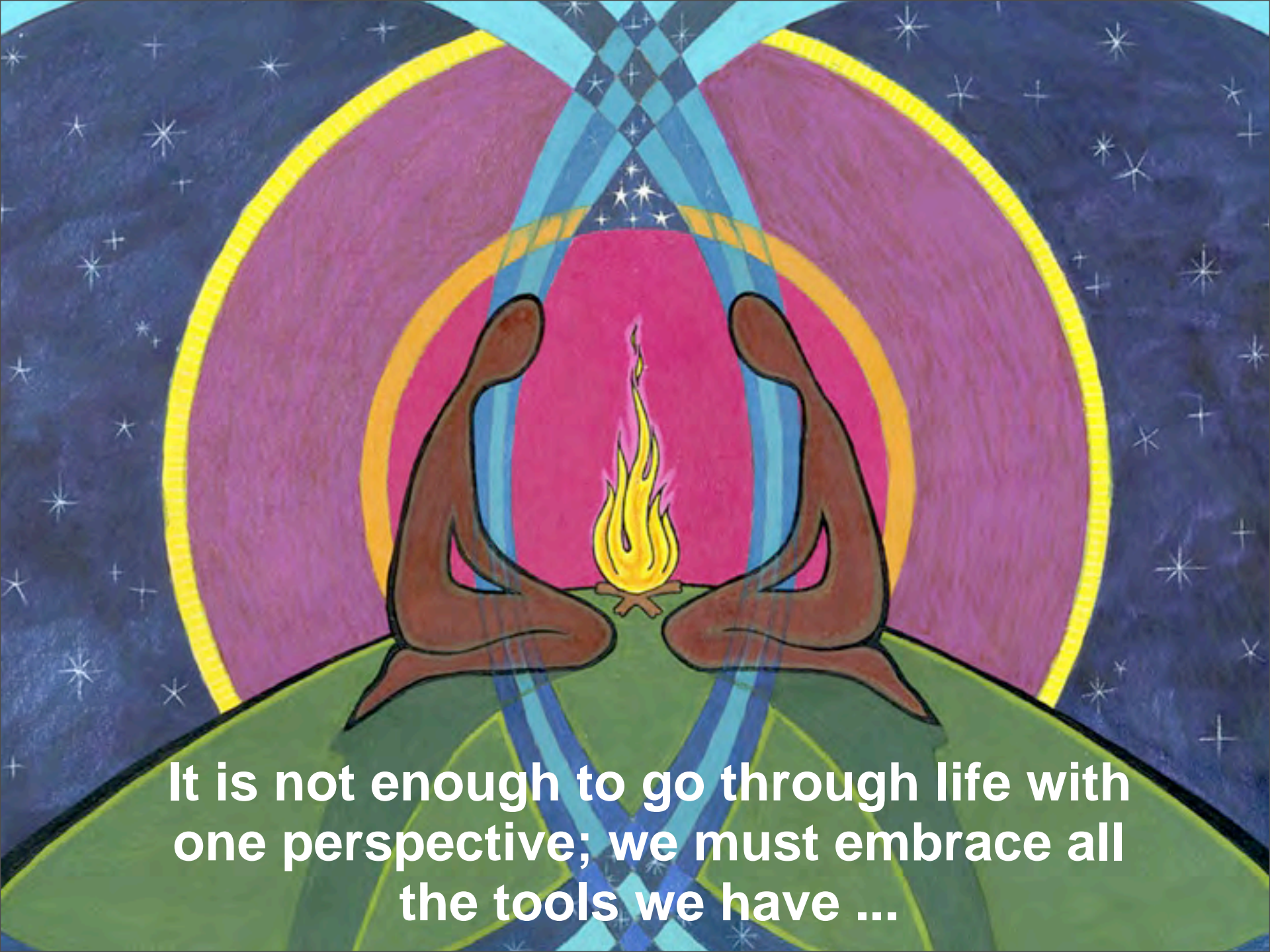
That's impossible.

The only role we have is through our efforts to continually speak for species that can't speak for themselves.



Every living being is both physical and spiritual.



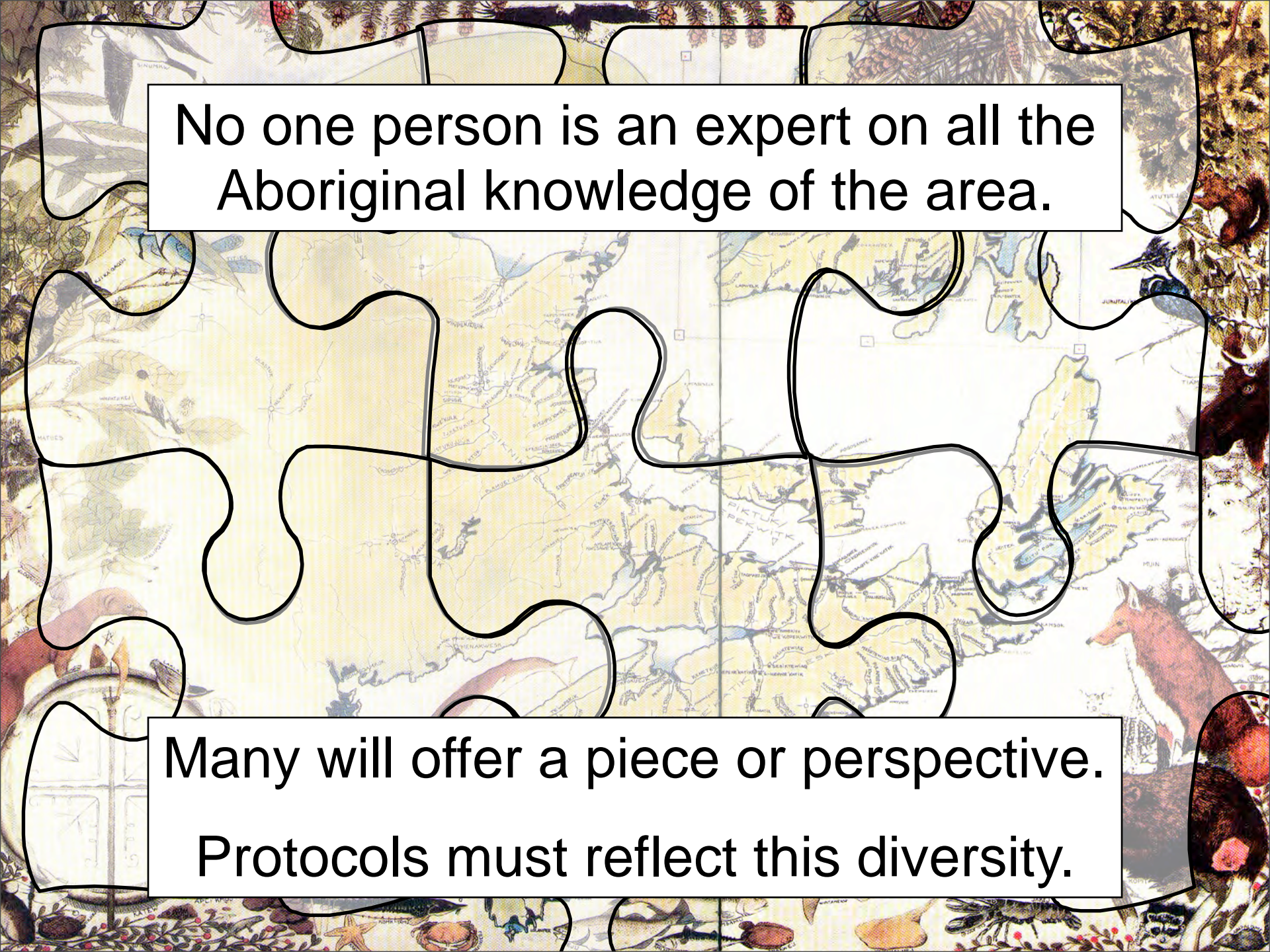


It is not enough to go through life with one perspective; we must embrace all the tools we have ...

Knowledge is spirit.
It is living and we are the conduit.



It is a gift, passed on through many people.

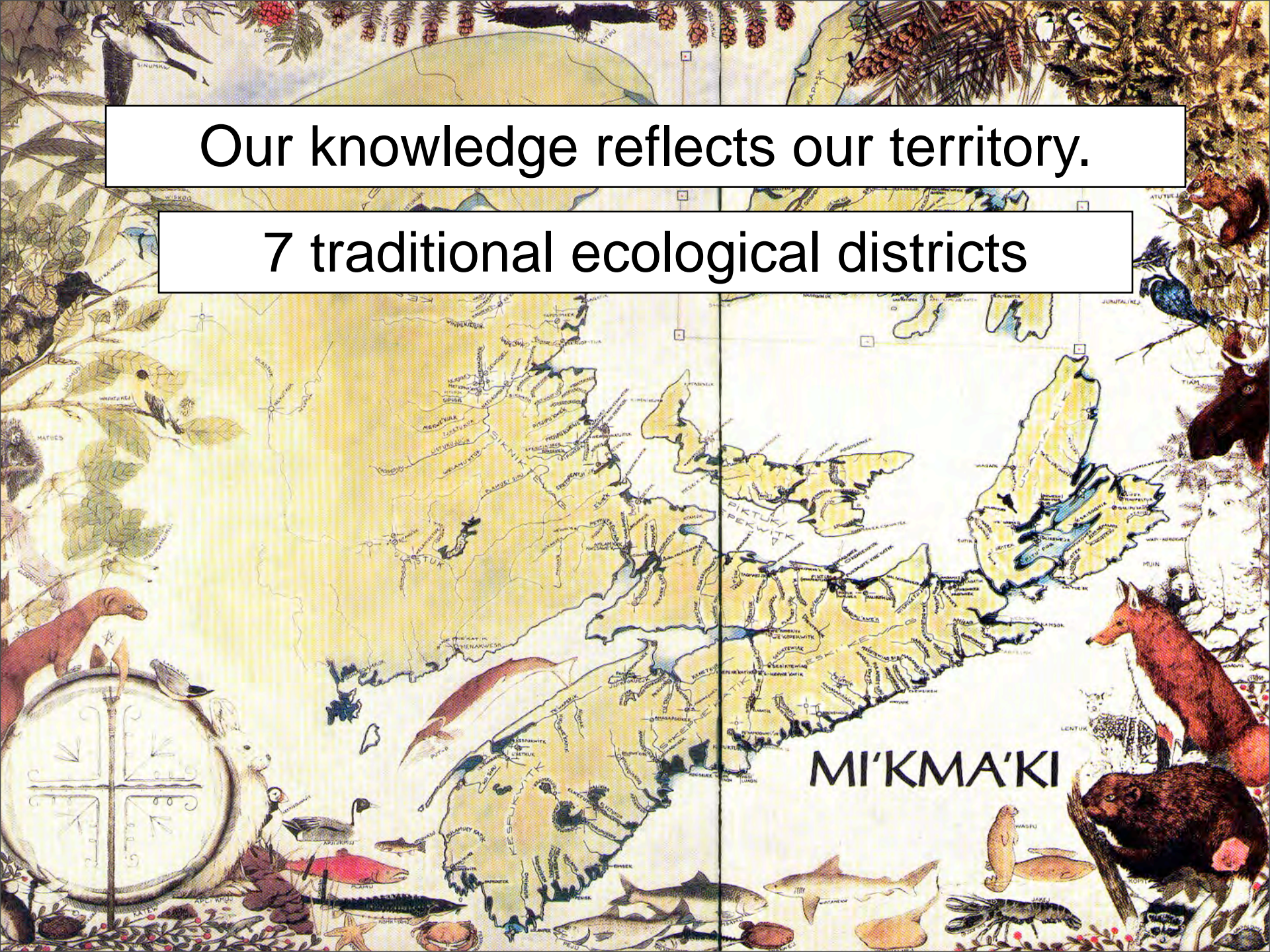


No one person is an expert on all the
Aboriginal knowledge of the area.

Many will offer a piece or perspective.
Protocols must reflect this diversity.

Our knowledge reflects our territory.

7 traditional ecological districts



We are equal to,
and part and parcel of, the whole.



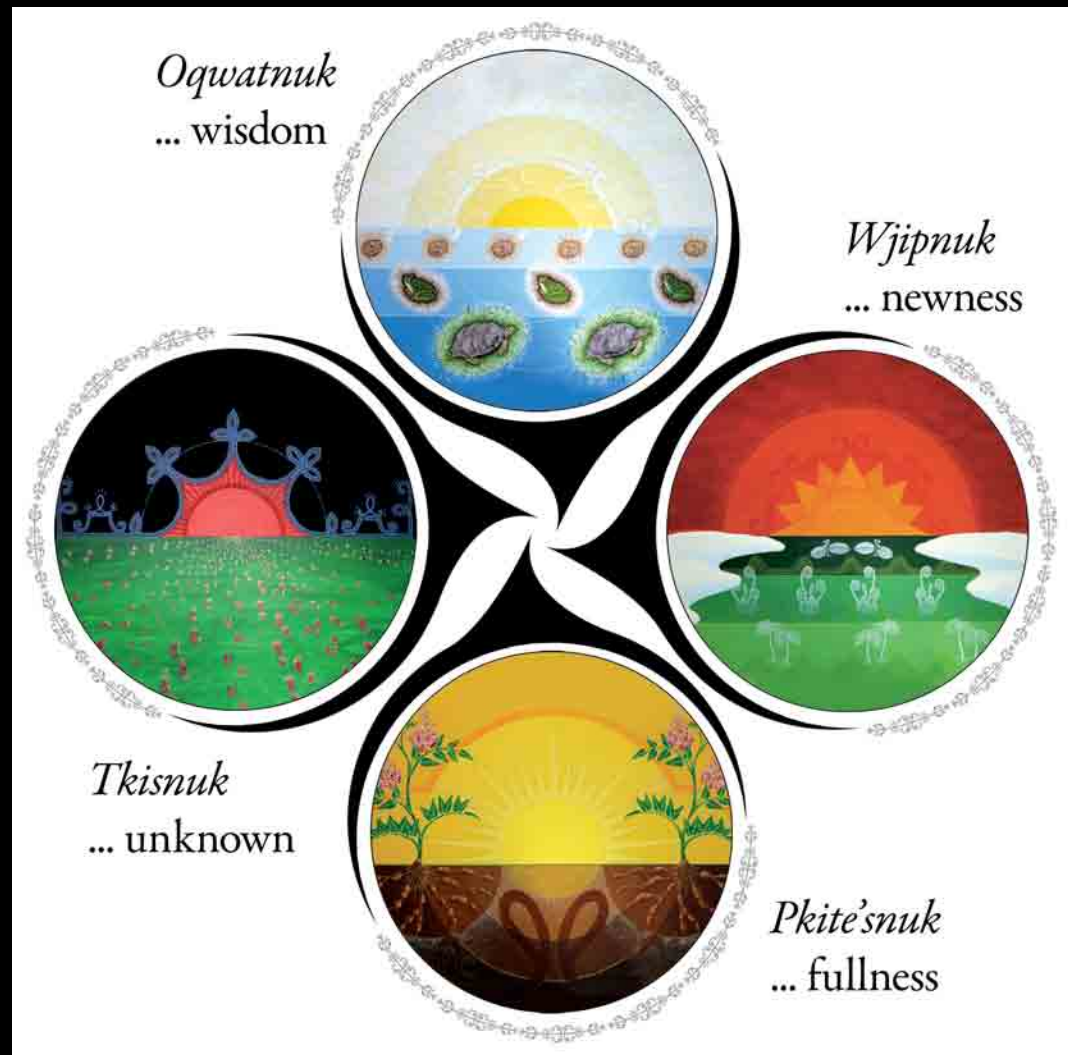
Reverence

Sacredness

Balance

Harmony

Flux



Canada Research Chairs / Chaires de recherche du Canada / Canada

Social Sciences and Humanities Research Council of Canada / Conseil de recherches en sciences humaines du Canada

Canada Foundation for Innovation / Fondation canadienne pour l'innovation

CAPE BRETON UNIVERSITY

Mermait Theatre of Nova Scotia

Membertou Elementary

CIHR IRSC / Canadian Institutes of Health Research / Instituts de recherche en santé du Canada

Mi'kmaq College Institute / Mi'kmaq Espi Kina'matno'kuom

INSTITUTE FOR INTEGRATIVE SCIENCE & HEALTH

IWK Health Centre Foundation

IAPH

ATLANTIC ABORIGINAL Health Research Program

Mi'kmaq Elders

NOVA SCOTIA Health Research FOUNDATION

SABLE OFFSHORE ENERGY INDEPENDENCE

UNAMA'KI INSTITUTE OF NATURAL RESOURCES

KECCA / Knowledge, Education and Cultural Consultant Association

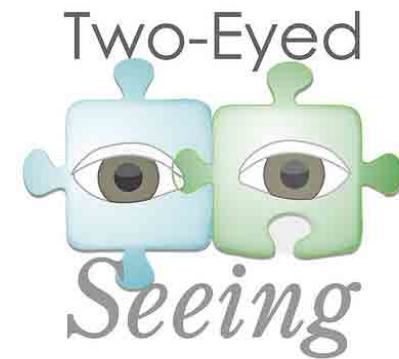
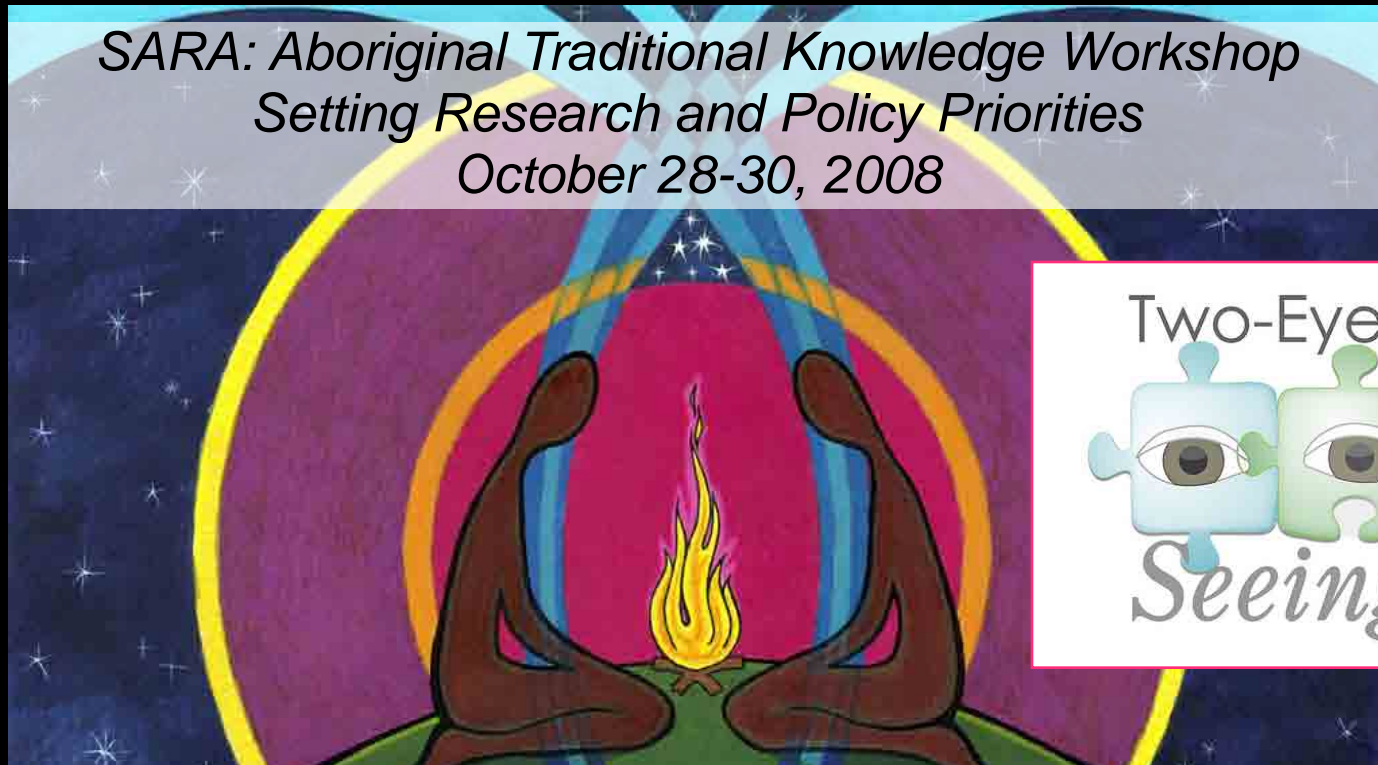
NSERC CRSNG

Mi'kmawey Debert

Eskasoni Detachment / Royal Canadian Mounted Police / Gendarmerie royale du Canada

Integrative Science & Two-Eyed Seeing

*SARA: Aboriginal Traditional Knowledge Workshop
Setting Research and Policy Priorities
October 28-30, 2008*



Sana Kavanagh BSc MES (in progress)

Research Associate, Institute for Integrative Science and Health
Cape Breton University, Sydney, Nova Scotia

For more information about Integrative Science contact:
cheryl_bartlett@cbu.ca





Cheryl M. Bartlett, PhD

Canada Research Chair in Integrative Science
Professor of Biology, Cape Breton University
Sydney, Nova Scotia



Murdena Marshall, MEd

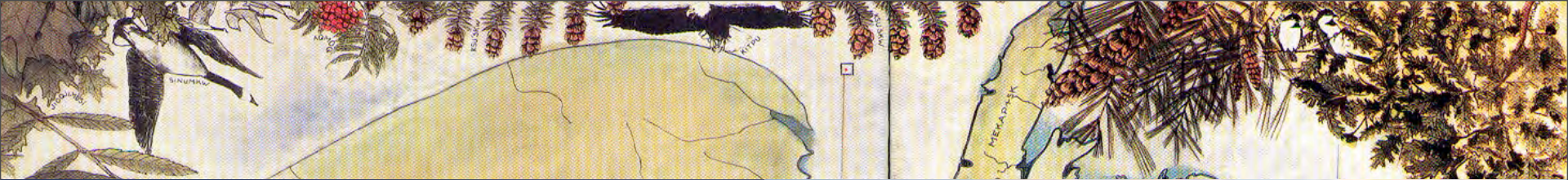
Mi'kmaq Elder, Eskasoni First Nation
Elder Advisor, Institute for Integrative Science and Health
Professor Mi'kmaq Studies (retired), Cape Breton University



Albert Marshall

Mi'kmaq Elder, Eskasoni First Nation
Elder Advisor, Institute for Integrative Science and Health
Unama'ki Institute of Natural Resources





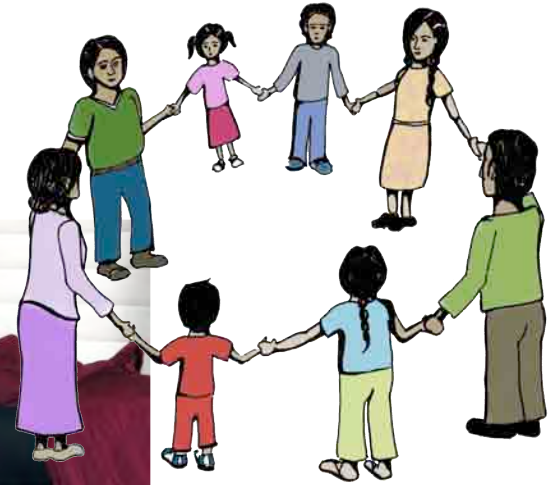
CAPE BRETON UNIVERSITY





LESSONS LEARNED

over 12+ years



LESSONS LEARNED

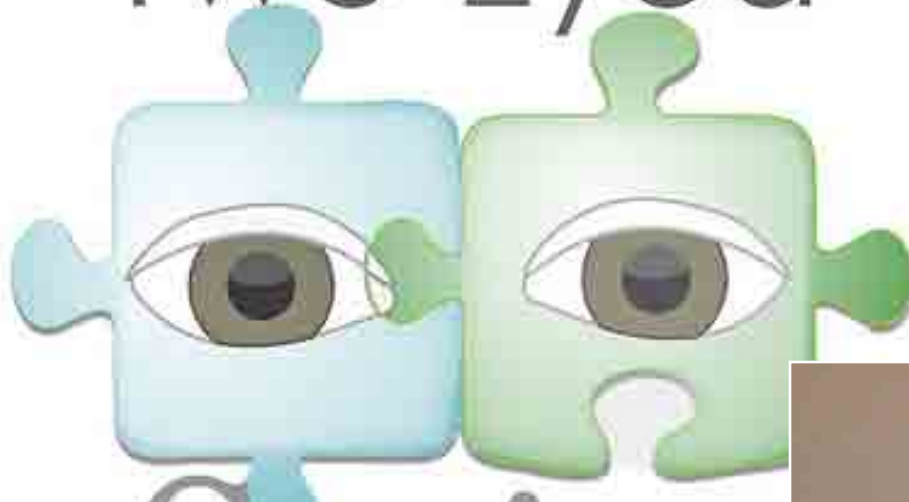
**ACKNOWLEDGE
WE NEED
EACH OTHER ...**
co-learning journey





Two-Eyed Seeing

Two-Eyed



a guiding principle
for working together



**Mr. Albert Marshall, Mi'kmaq Elder
Eskasoni First Nation**



Two-Eyed Seeing

“LEARN ... to see from one eye with the strengths of Indigenous knowledges and ways of knowing, and from the other eye with the strengths of Western (or Eurocentric or mainstream) knowledges and ways of knowing ... and to use both these eyes together, for the benefit of all.”



LESSONS LEARNED

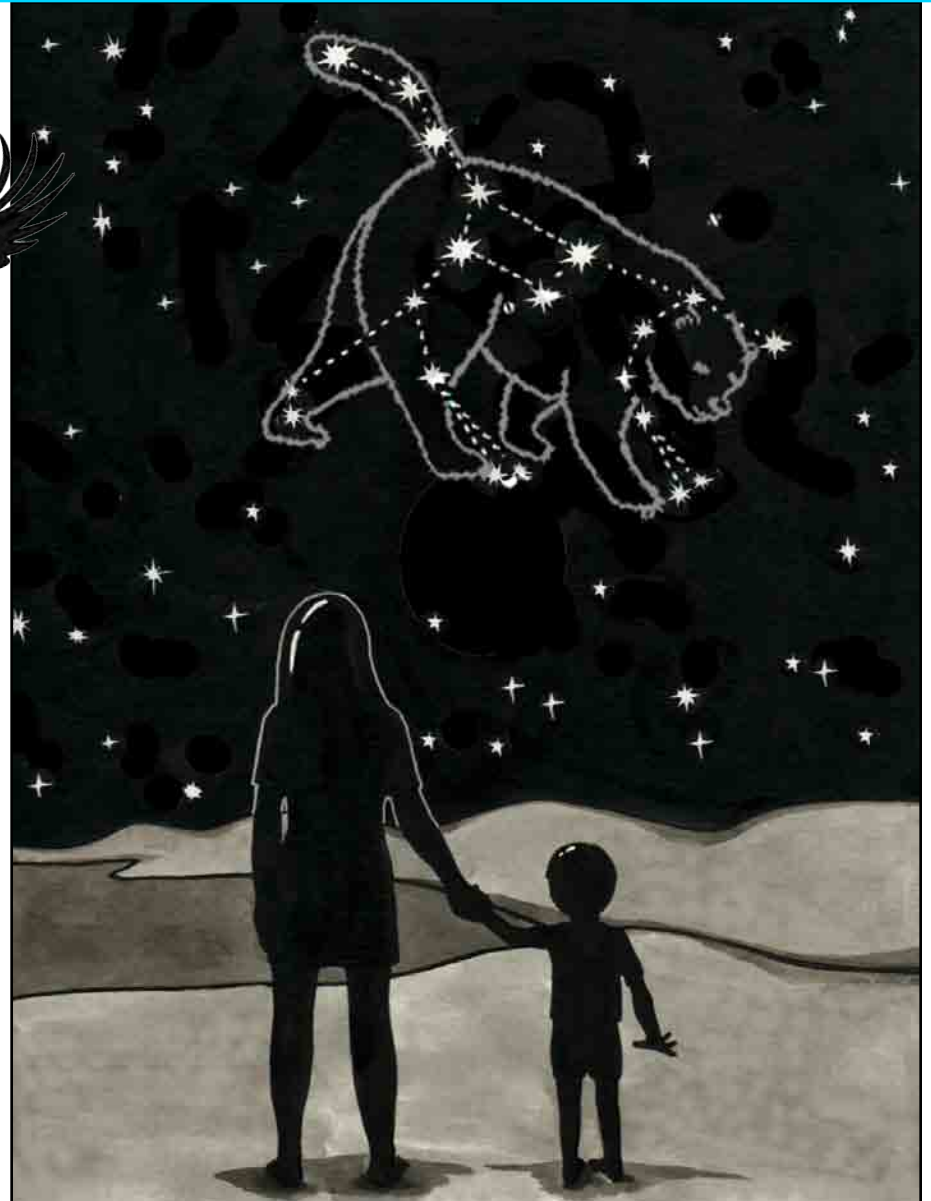
**ACKNOWLEDGE
WE NEED
EACH OTHER ...**
co-learning journey

view "SCIENCE"
inclusively

stories of our interactions with and within nature

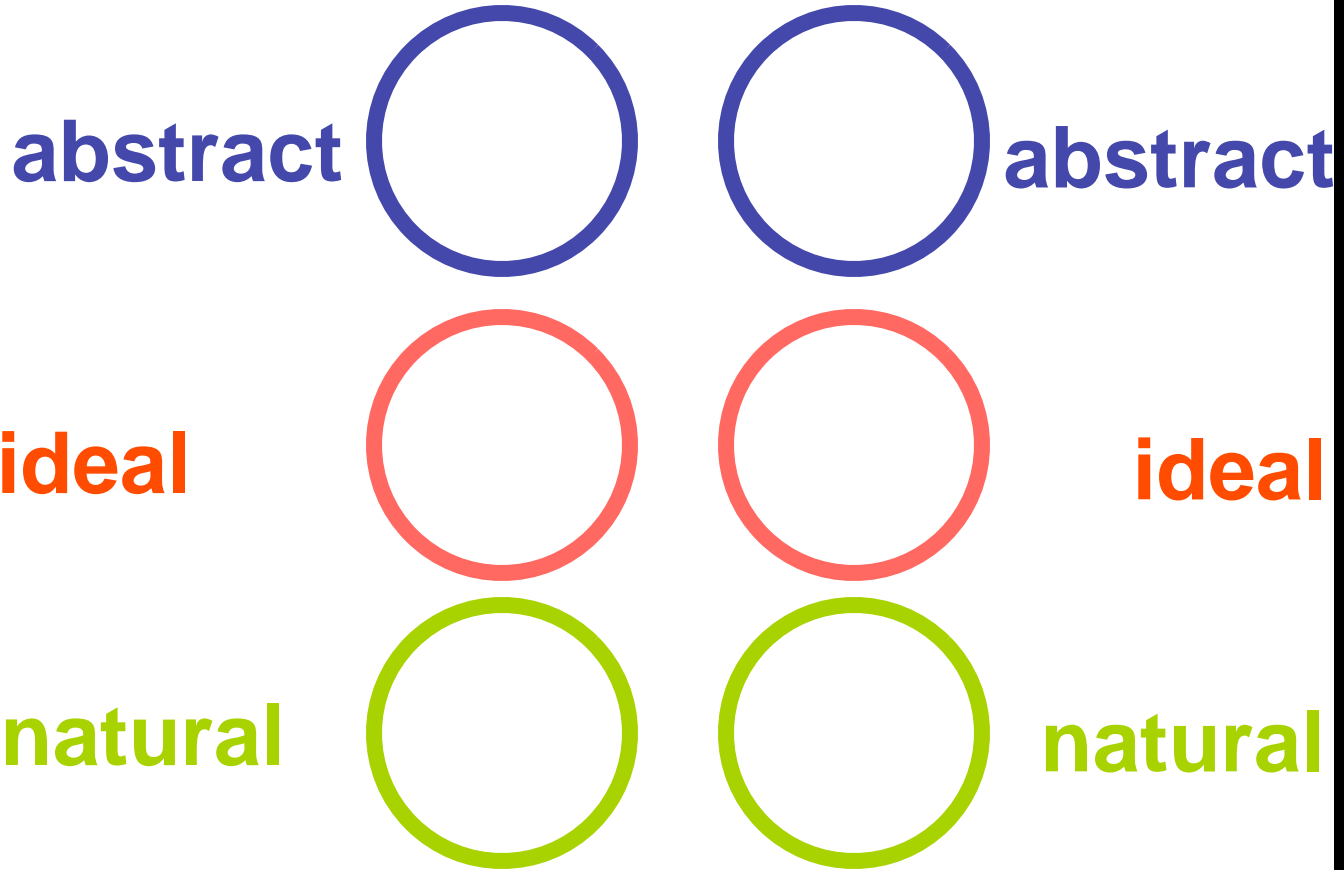


Science is
dynamic,
pattern-based
knowledge.





Pattern Conceptual Framework

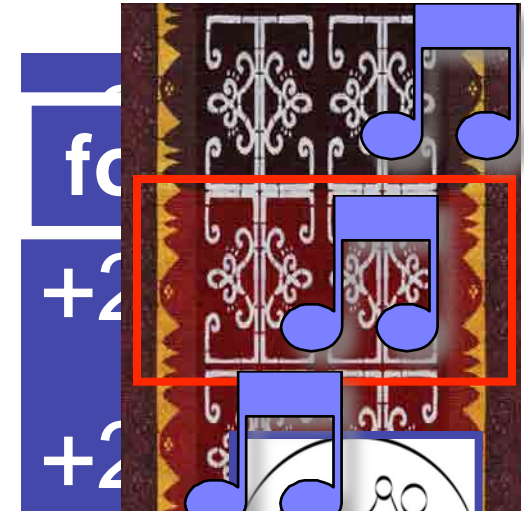
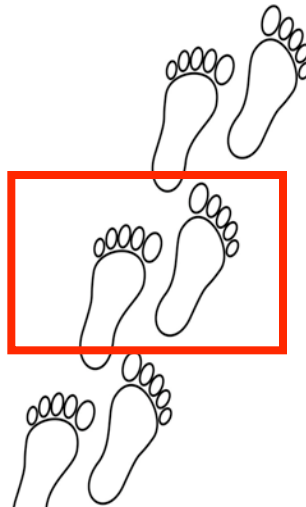


PATTERN CONCEPTUAL FRAMEWORK

natural

ideal

abstract



recognize
pattern

transform
pattern

express
pattern



LESSONS LEARNED

**ACKNOWLEDGE
WE NEED
EACH OTHER ...**
co-learning journey

**DO ... in a
CREATIVE, GROW
FORWARD WAY**

view "SCIENCE"
inclusively



Co-learning



Go into a forest, you see the birch, maple, pine.
Look underground and all those trees are holding
hands. We as people must do the same.

(late Mi'kmaq Chief, Spiritual Elder, and Healer Charlie Labrador)

Picturing Human Health and the Environment: First Steps ... from "Co-Learning Journey" to "Two-Eyed Seeing"

Sean Kavanagh, Cheryl Bartlett, Nadine LaRoc, Monique Marshall, & Albert Marshall

The authors would like to thank the following individuals for their assistance in the development, design, and dissemination of this project: ...

- Project goals ...
- 1. To provide a shared understanding of how to talk together
 - 2. To provide a shared understanding of how to walk together
 - 3. To provide a shared understanding of how to see together

Phase One: Recognizing Health and Healing ...

- Learning Objectives:**
- Develop a shared understanding of the link between health and healing
 - Develop a shared understanding of the link between health and healing
 - Develop a shared understanding of the link between health and healing

- Phase Two: Co-Learning Journey**
- Establish a shared understanding of the link between health and healing
 - Develop a shared understanding of the link between health and healing
 - Develop a shared understanding of the link between health and healing

- Co-Learning Approach**
- Learning together
 - Learning from each other
 - Learning from the environment
 - Learning from the community

Co-Learning Journey ...



Co-Learning Journey

A shared understanding of how to talk together
This is the first step in the process of learning ...



Each quadrant represents a different perspective ...



Two-Eyed Seeing

A shared vision of how to walk together
This is the second step in the process of learning ...



Creating a shared vision for Two-Eyed Seeing has helped us share the story of human health and healing ...

Concepts + Terms

A shared understanding
This is the third step in the process of learning ...



LESSONS LEARNED

**ACKNOWLEDGE
WE NEED
EACH OTHER ...**
co-learning journey

**DO ... in a
CREATIVE, GROW
FORWARD WAY**

view "SCIENCE"
inclusively

put our *values + actions*
+ *knowledges* in front of
us ... like an object

“See, in the Mi’kmaq world, in all Native worlds, you have to give recognition to everything: misdeeds, good deeds, past deeds, you know? Anything. You have to give that acknowledgement. Everything that you do, you have to acknowledge it.”



Murdena Marshall, Elder, Mi’kmaq Nation

Together We Heal & Grow
seeing & acknowledging my deeds

“See, in the Mi’kmaq world, you have to give everything: misdeeds, good deeds, you know? Anything you give that acknowledgement that you do, you have to

put our *values + actions + knowledges* in front of us ... like an object



Murdena Marshall, Elder, Mi’kmaq Nation

I Got It From an Elder



Conversations
in Healing
Language

Iwama et al. 2007; Gaspereau Press Limited

Together We Heal & Grow
seeing & acknowledging my deeds

LESSONS LEARNED

**ACKNOWLEDGE
WE NEED
EACH OTHER ...**
co-learning journey

**DO ... in a
CREATIVE, GROW
FORWARD WAY**

put our *values + actions*
+ *knowledges* in front of
us ... like an object

view "SCIENCE"
inclusively

use **VISUALS**

Two-Eyed



Seeing

Bringing Knowledges Together



Integrative Science



SCIENCE

education, research, applications,
youth and community outreach

Indigenous

Western

“bringing our sciences together”

LESSONS LEARNED

**ACKNOWLEDGE
WE NEED
EACH OTHER ...**
co-learning journey

**DO ... in a
CREATIVE, GROW
FORWARD WAY**

put our *values + actions*
+ *knowledges* in front of
us ... like an object

WEAVE
back and forth between
our worldviews

weave via
BIG PICTURES

use **VISUALS**

view "SCIENCE"
inclusively





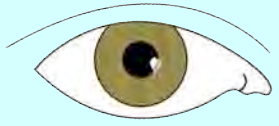
Two-Eyed Seeing

learning to see with the strengths of each & together

OUR WORLDS

#1

Question:
What do we believe
the world or cosmos to be?
(ontology)



Two-Eyed Seeing

learning to see with the strengths of each & together

OUR WORLDS

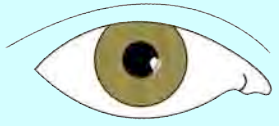
#1

interconnective

subject ...
interconnective
and animate:
spirit +
energy + matter

parts & wholes

object ...
comprised of parts and
wholes characterized by
systems and emergences:
energy + matter



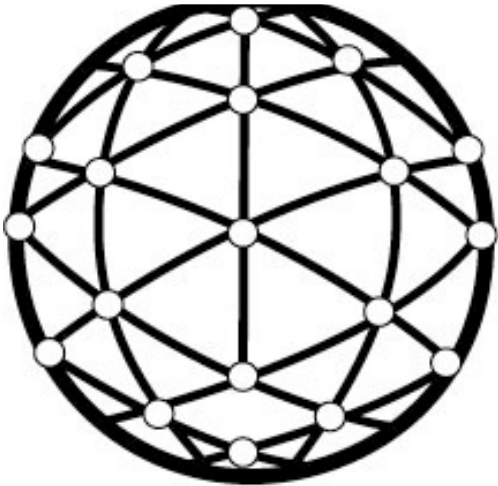
Two-Eyed Seeing

learning to see with the strengths of each & together

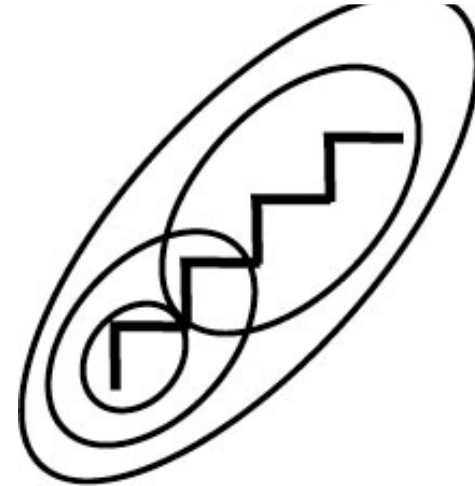
OUR WORLDS

#1

interconnective



parts & wholes





Two-Eyed Seeing

learning to see with the strengths of each & together

OUR KEY CONCEPTS and ACTIONS

#2

Question:
What do we value as
“ways of coming to know”
the cosmos?
(epistemology)



Two-Eyed Seeing

learning to see with the strengths of each & together

OUR KEY CONCEPTS and ACTIONS

#2

- respect
- relationship
- reverence
- reciprocity
- ritual (ceremony)
- repetition
- responsibility

- hypothesis
(making & testing)
- data collection
- data analysis
- model & theory
construction

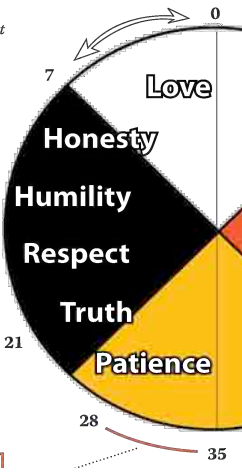
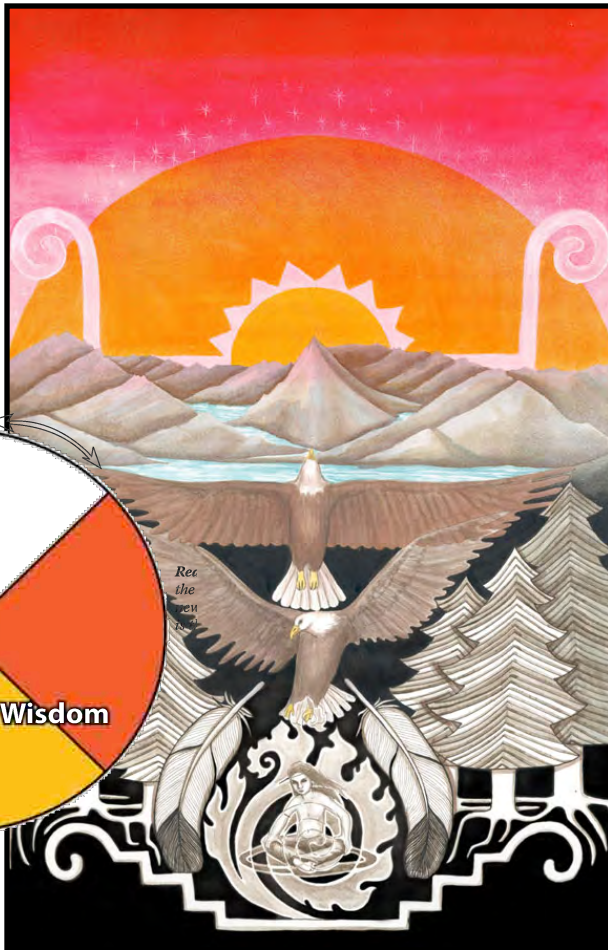


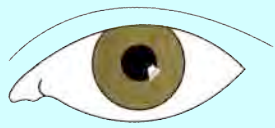
Two-Eyed Seeing

learning to see with the strengths of each & together

OUR KEY CONCEPTS and ACTIONS

#2





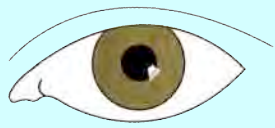
Two-Eyed Seeing

learning to see with the strengths of each & together

OUR LANGUAGES and METHODOLOGIES

#3

**Question:
What can remind us
of the complexity within
our ways of knowing?**



Two-Eyed Seeing

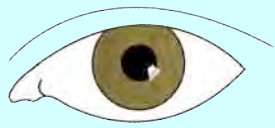
learning to see with the strengths of each & together

OUR LANGUAGES and METHODOLOGIES

#3

weaving of patterns within nature's patterns via creative relationships and reciprocities among **love, land, and life (vigour)** that are constantly reinforced and nourished by Aboriginal languages

un-weaving of nature's patterns (especially via analytic logic and the use of instruments) to cognitively reconstruct them, especially using **mathematical language (rigour)** and computer models



Two-Eyed Seeing

learning to see with the strengths of each & together

OUR LANGUAGES and METHODOLOGIES

#3

Life
Love
Land

vigour

WEAVING

Math
&
Instruments

rigour

UN-WEAVING



Two-Eyed Seeing

learning to see with the strengths of each & together

OUR LANGUAGES and METHODOLOGIES

#3



Life
Love
Land

vigour

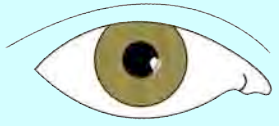
WEAVING



Math
&
Instruments

rigour

UN-WEAVING



Two-Eyed Seeing

learning to see with the strengths of each & together

OUR OVERALL KNOWLEDGE OBJECTIVES

#4

Question:
What overall goals
do we have for
our ways of knowing?



Two-Eyed Seeing

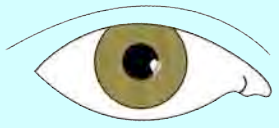
learning to see with the strengths of each & together

OUR OVERALL KNOWLEDGE OBJECTIVES

#4

collective, living knowledge to enable nourishment of one's journey within expanding sense of "place, emergence and participation" for wholeness and interconnectiveness

dynamic, testable, published knowledge independent of personal experience that can enable prediction and control



Two-Eyed Seeing

learning to see with the strengths of each & together

OUR OVERALL KNOWLEDGE OBJECTIVES

#4

collective, living knowledge to enable nourishment of one's journey within expanding sense of "place, emergence and participation" for wholeness and interconnectiveness

towards resonance
of understanding
within environment

dynamic, testable, published knowledge independent of personal experience that can enable prediction and control

towards construction
of understanding
of environment



Two-Eyed Seeing

learning to see with the strengths of each & together

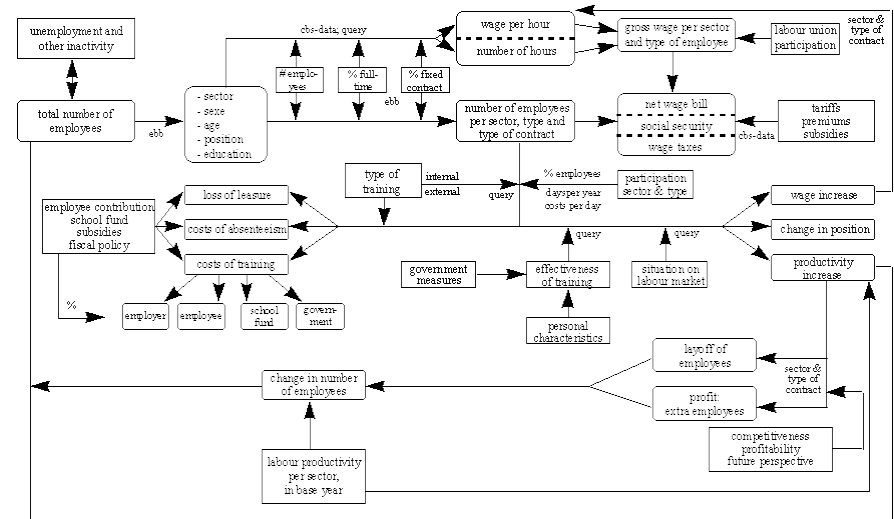
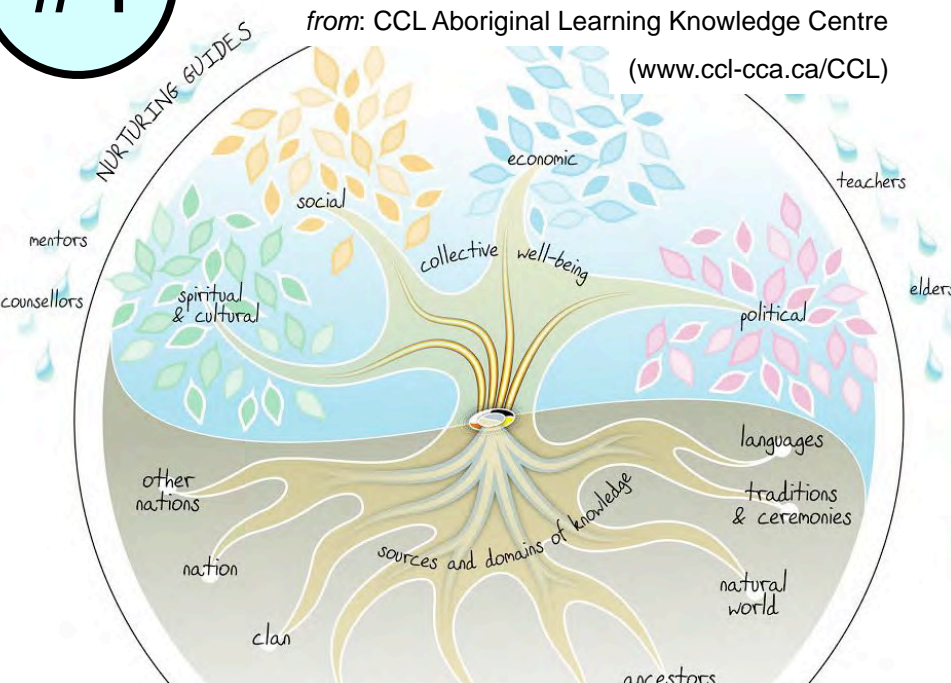
OUR OVERALL KNOWLEDGE OBJECTIVES

#4

from: CCL Aboriginal Learning Knowledge Centre

(www.ccl-cca.ca/CCL)

from: www.leads.ac.uk



towards resonance of understanding within environment

towards construction of understanding of environment



Two-Eyed



Seeing

Bringing Knowledges Together





Two-Eyed Seeing





Canada Research
Chairs

Chaires de recherche
du Canada



Social Sciences and Humanities
Research Council of Canada

Conseil de recherches en
sciences humaines du Canada

Canada
Canada



CIHR IRSC

Canadian Institutes of
Health Research Instituts de recherche
en santé du Canada



Canada Foundation
for Innovation

Fondation canadienne
pour l'innovation



Membertou
Elementary



NSERC
CRSNG



Mi'kmawey Debert



IWK Health Centre
Foundation



Eskasoni Detachment
Royal Canadian Mounted Police Gendarmerie royale
du Canada



Mi'kmaq College Institute
Mi'kmaq Espi Kina'matno'kuom

The support of various partners
and funding agencies is
gratefully acknowledged.