

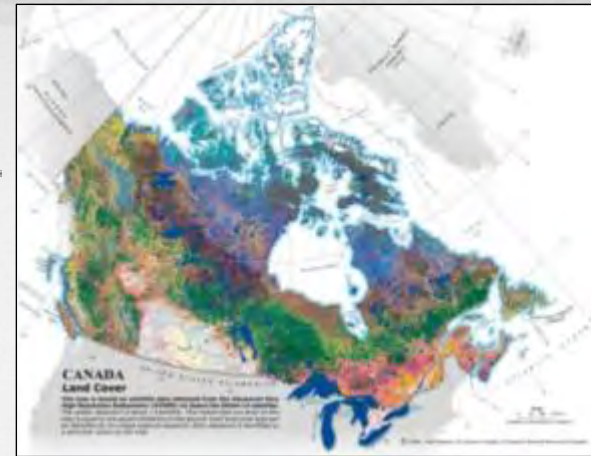
21 February 2013
Cheryl Bartlett, CM, PhD



Antigonish, NS
presentation for:

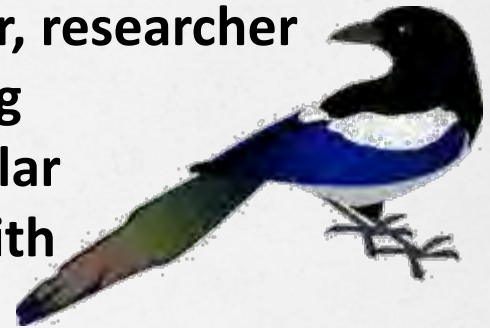
National Collaborating Centre
for Determinants of Health

Centre de collaboration nationale
des déterminants de la santé

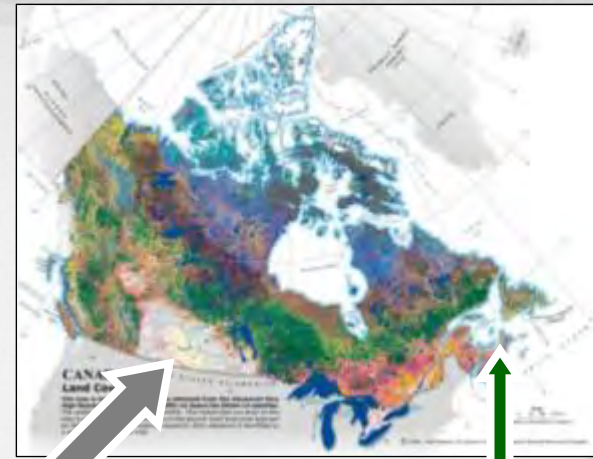
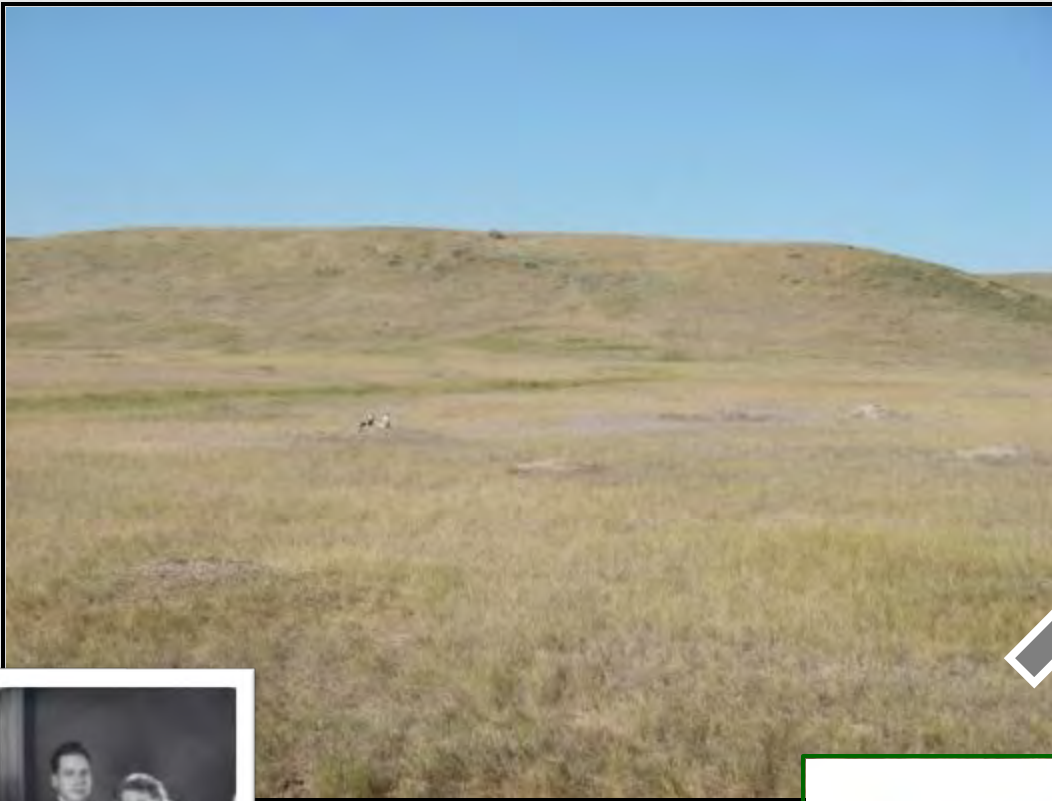


HOUR #1: Tell the story of my journey related to Two-Eyed Seeing, including elements such as:

- experiences (successes & challenges) as a Western university-trained scientist, teacher, researcher
- contact with the concept of Two-Eyed Seeing
- shifts in thinking as an individual and a scholar
- development of professional relationship with Elders Murdena and Albert Marshall
- evolution of collaborations with Elders Marshall in promoting Two-Eyed Seeing in a wide range of public policy environments
- thoughts on where this work is leading and the difference I hope it will make (who will benefit and how)
- a few key documents that NCCDH team can use as references

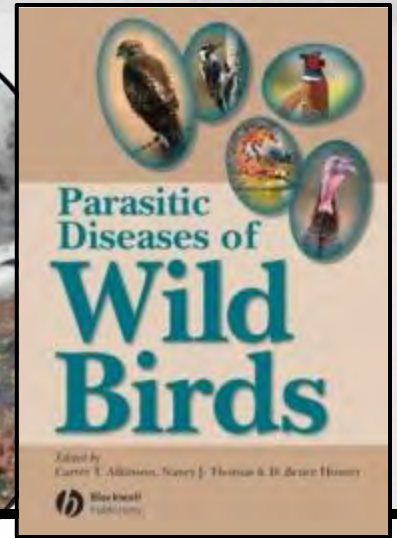


HOUR #2: Discussion re questions that above raise for NCCDH staff.





Cheryl Bartlett, CM, PhD
 Professor Emerita
 Canada Research Chair
 in Integrative Science (retired)
 Professor of Biology (retired)
 Cape Breton University
cheryl_bartlett@cbu.ca
www.integrativescience.ca



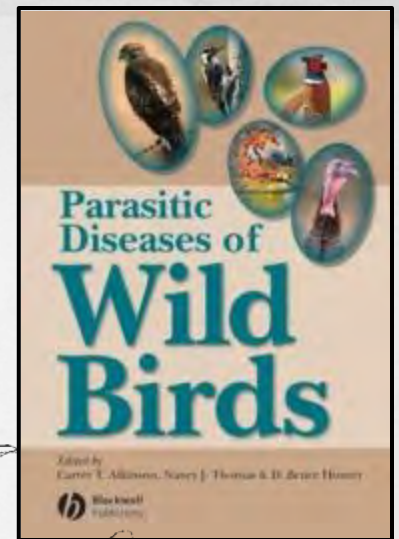

Alberta




Nova Scotia

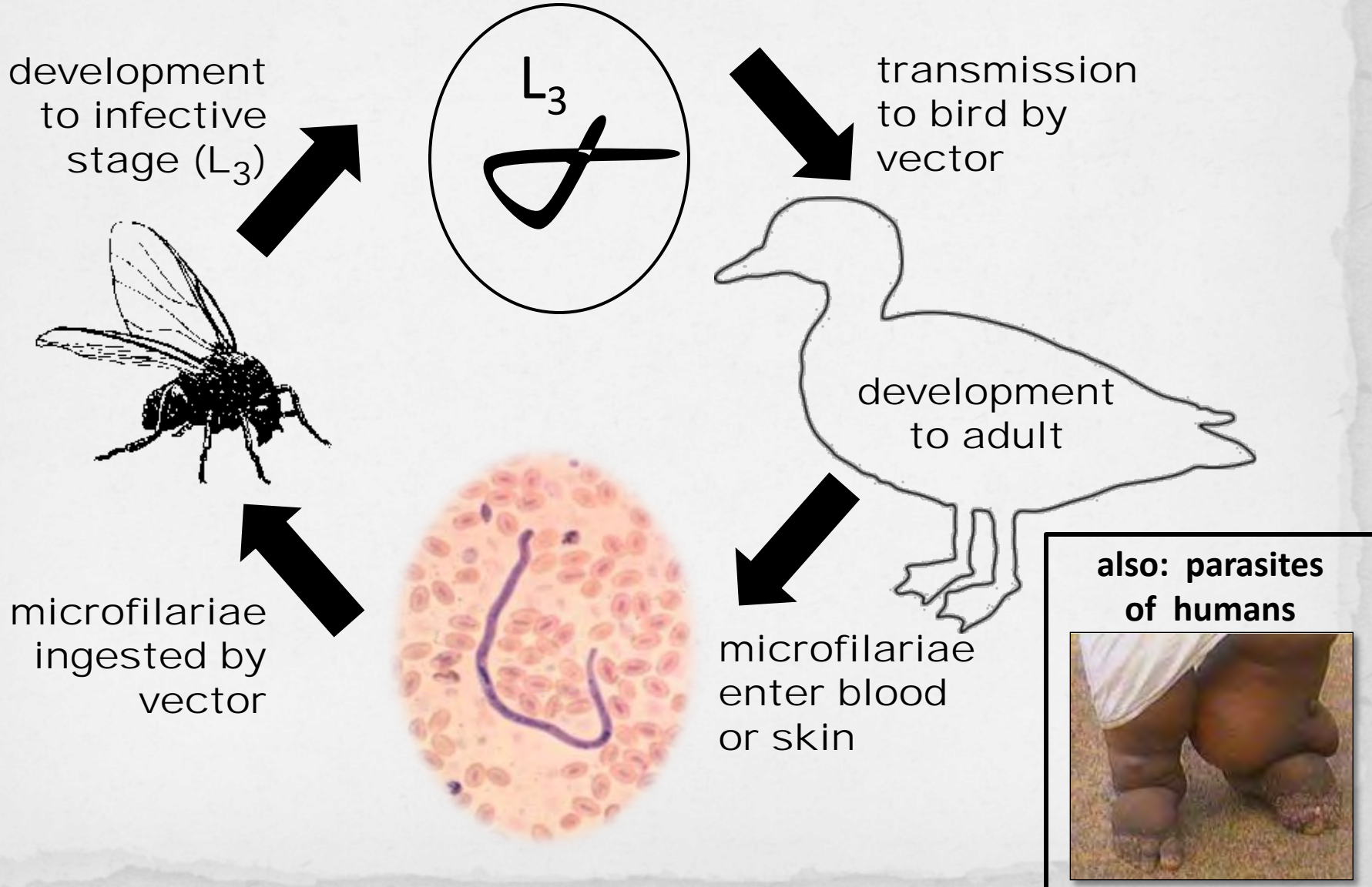
Parasitology research

- birds: MSc + Post-Doctorate
- mammals: PhD



Filarioid Nematode Parasites

- life cycle showing transmission -



Pathogen

- adult worms
- microfilariae

Eulimdana clava
microfilariae in skin*

agent?

louse vector

● neck

clinical sign
(isolated report)
● extensive
feather loss
in neck region



adult worms in neck

from: Guildal & Settnes
1968; Nord. Vet-Med: 20



feather

*



original

(actually = MF of *Pelecitus fulicaeatrae*)

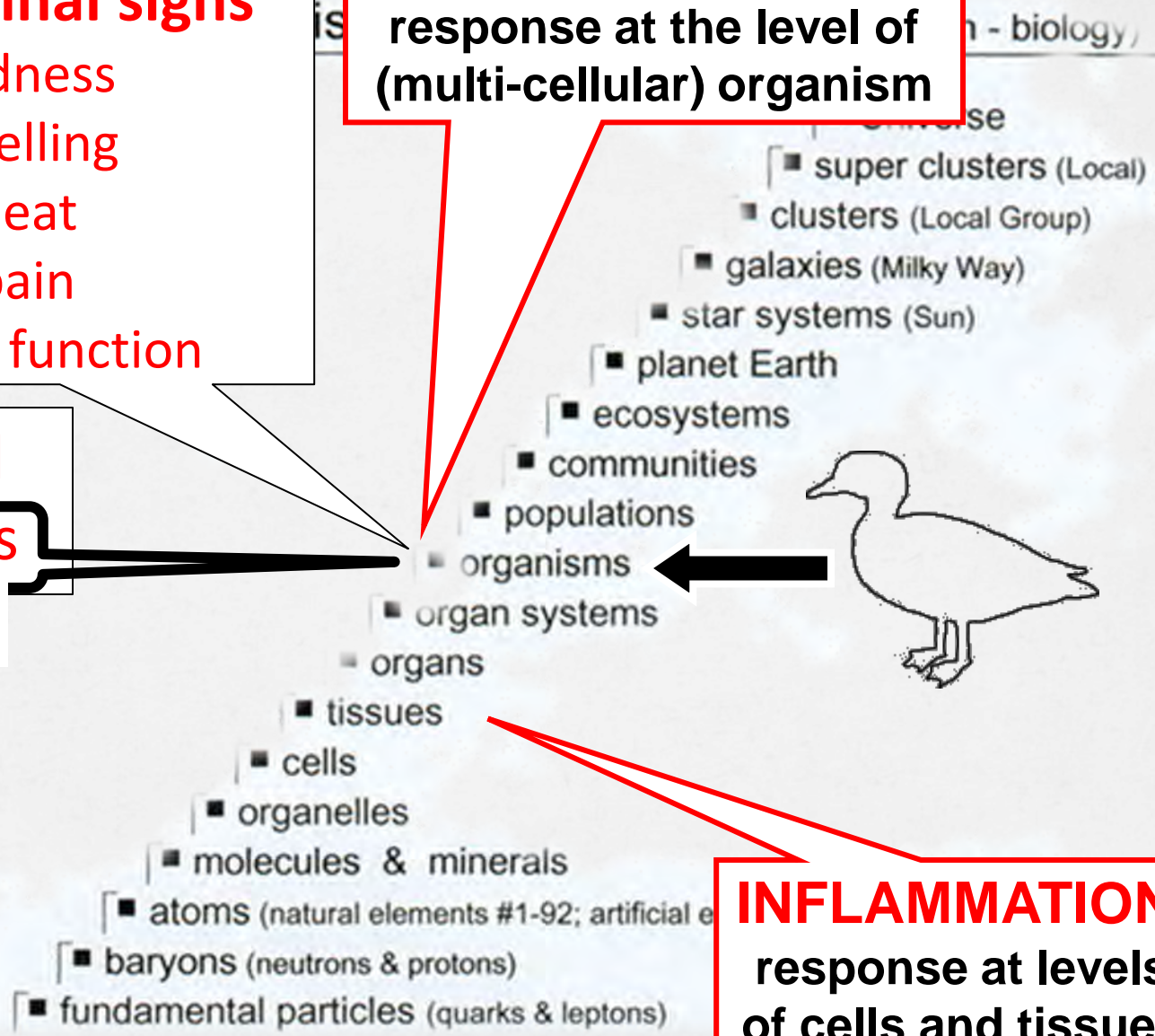
objective (... but)
e.g. cardinal signs

- redness
- swelling
- heat
- pain
- loss of function

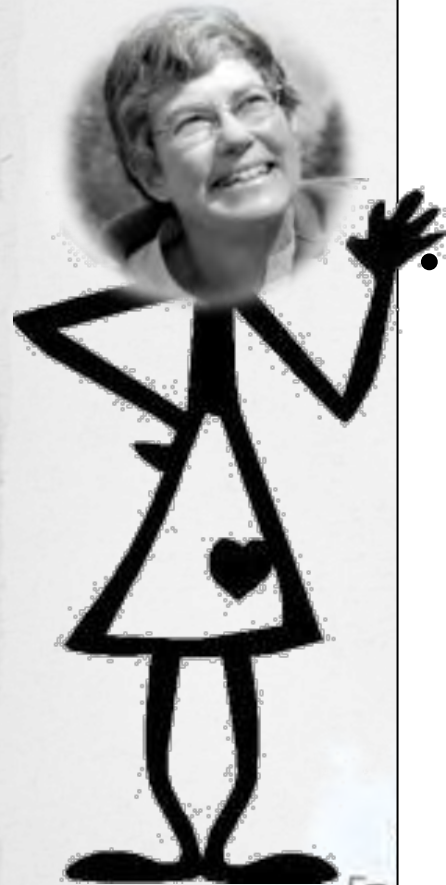
signs and symptoms
subjective

DISEASE
response at the level of
(multi-cellular) organism

INFLAMMATION
response at levels
of cells and tissues



Universe: Visible Matter (levels of organization - biology)



- ... but no:
- asking of “what is science?”
- nor
- creative thinking
 - “big picture” thinking
 - visual thinking
 - philosophy
 - sociology
 - psychology
 - anthropology
 - literature
 - arts
 - reflective praxis
 - cognitive fluidity

- Universe
 - super clusters (Local)
 - clusters (Local Group)
 - galaxies (Milky Way)
 - star systems (Sun)
 - planet Earth
 - ecosystems
 - communities
 - tions
 - s
 - ms
- tificial elements #93 & higher)

■ fundamental particles (quarks & leptons)

Universe: Visible Matter (levels of organization - biology)

... but no:
• asking of
“what is science?”

nor

- creative thinking
- “big picture” thinking
- visual thinking
- philosophy
- sociology
- psychology
- anthropology
 - literature
 - arts
- reflective praxis
- cognitive fluidity

- Universe
 - super clusters (Local)
 - clusters (Local Group)
 - galaxies (Milky Way)

... but yes:

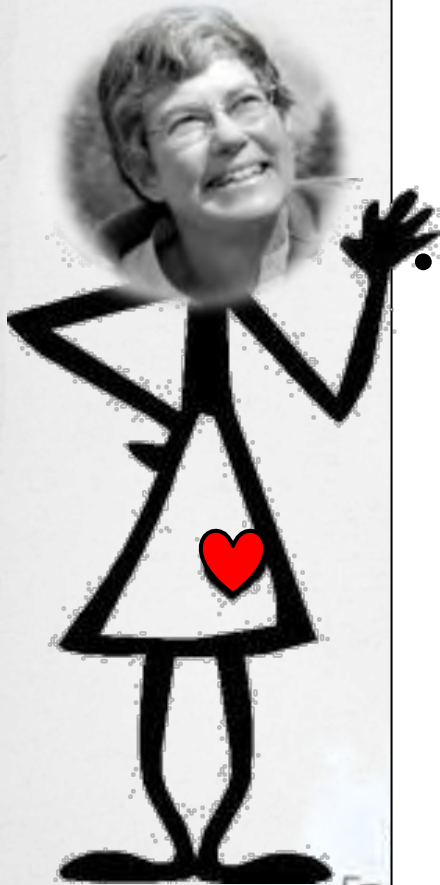
- love ♥
- language
- land
- lots more



**Mi'kmaw Elder
Murdena Marshall**

■ fundamental particles (quarks & leptons)

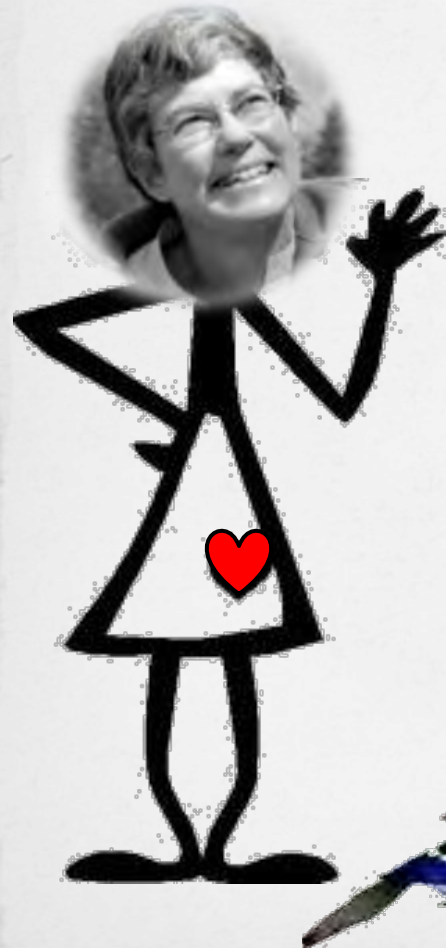
■ artificial elements #93 & higher)



CAPE BRETON
UNIVERSITY



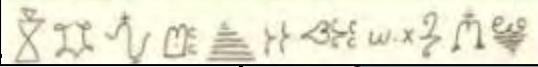
both on faculty
at CBU



**Mi'kmaw Elder
Murdena Marshall**

KECCA

Knowledge: Education and Cultural Consultant Associates

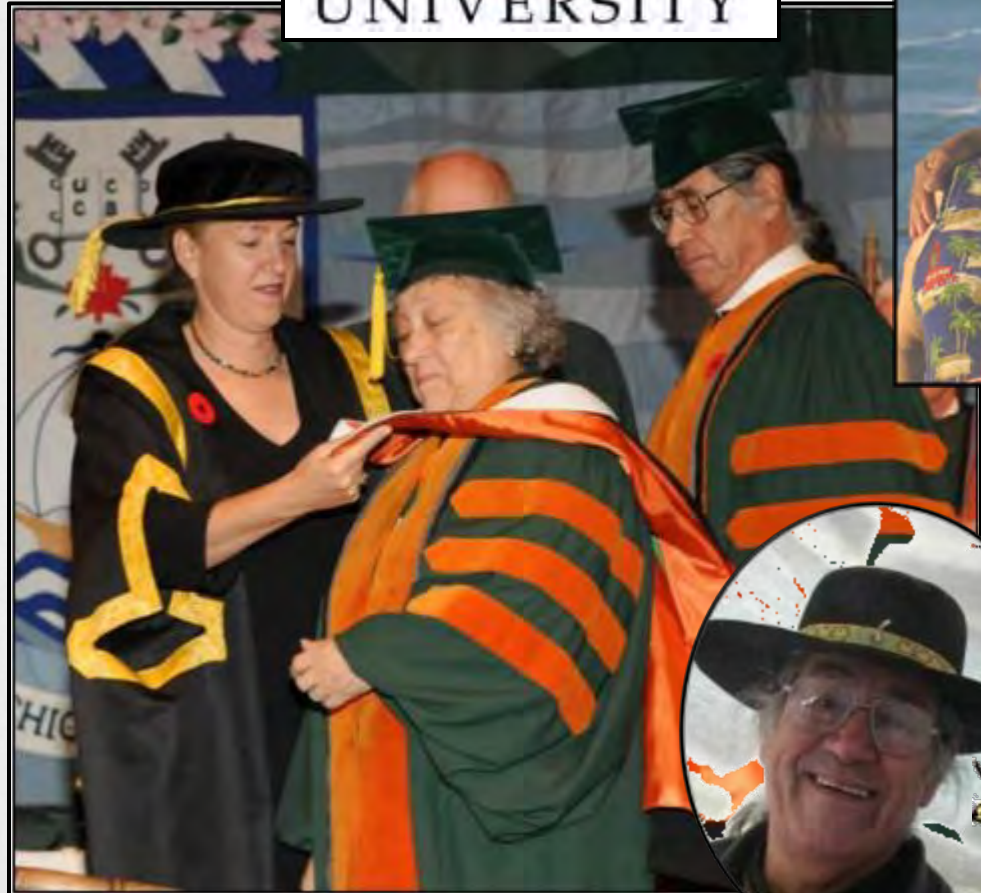


CAPE BRETON UNIVERSITY

New Zealand
2005



Moncton
2011



CBU 2009

Iqaluit
2009



**Mi'kmaw Elders
Murdena Marshall**

and

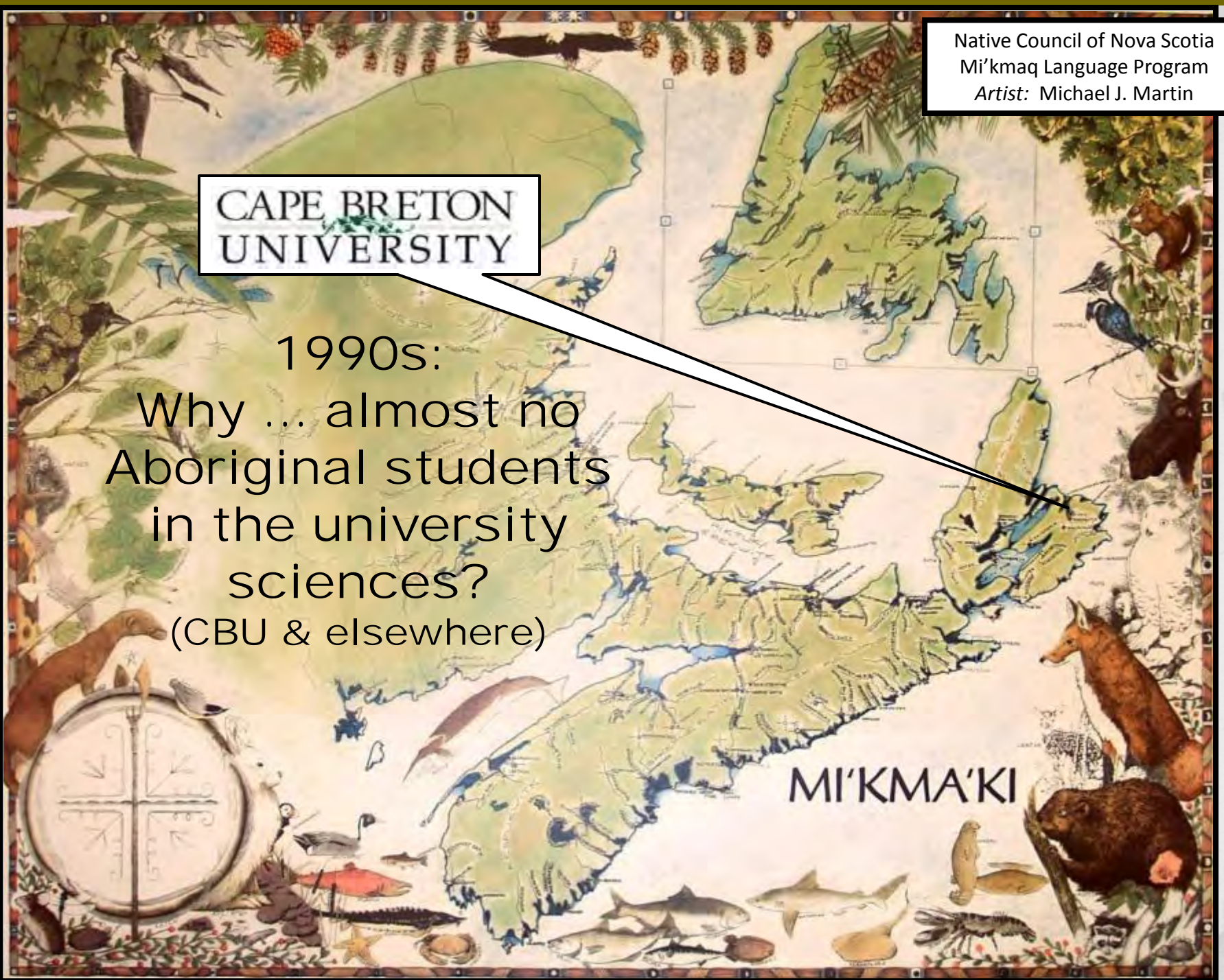
**Albert Marshall
Eskasoni First Nation
Unama'ki – Cape Breton**



CAPE BRETON
UNIVERSITY

1990s:
Why ... almost no
Aboriginal students
in the university
sciences?
(CBU & elsewhere)

MI'KMA'KI



Integrative Science

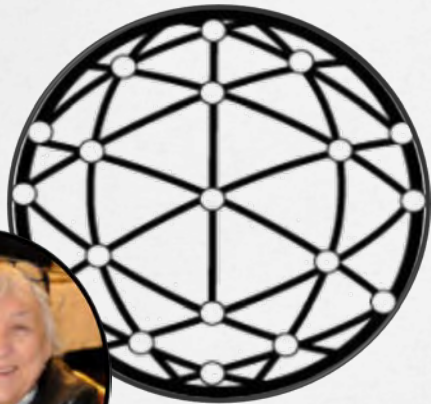
for almost two decades we have been on a
Co-Learning Journey

(wherein we have been our own experimental rats)





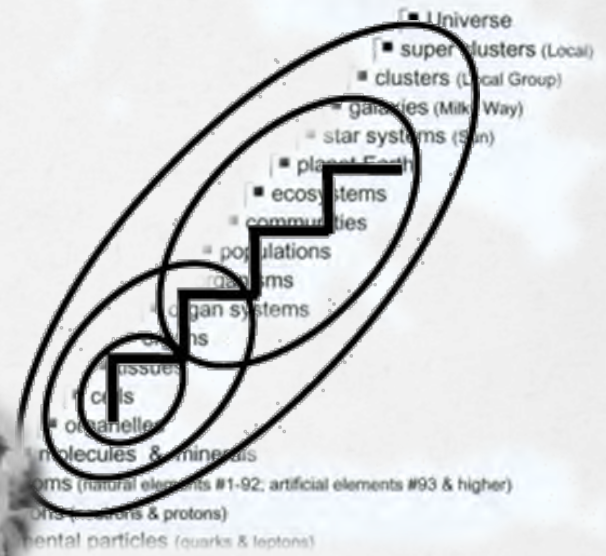
**cycles
rhythms
relationships**



PLUS: much more!!

**interconnective
- holistic -**

Universe: Visible Matter (levels of organization - biology)



**parts & wholes
- reductionistic -**



It must be a Co-Learning Journey ... guided by Two-Eyed Seeing.

Part of this journey is learning to “put our actions out in front of ourselves like an object” ... so we can examine them ... and ask ourselves: who/what are we? ... how might we transform? ... how might we “come together”?

**interconnective
- holistic -**

**parts & wholes
- reductionistic -**



Artist Basma Kavanagh

Integrative Science



our stories
our sciences

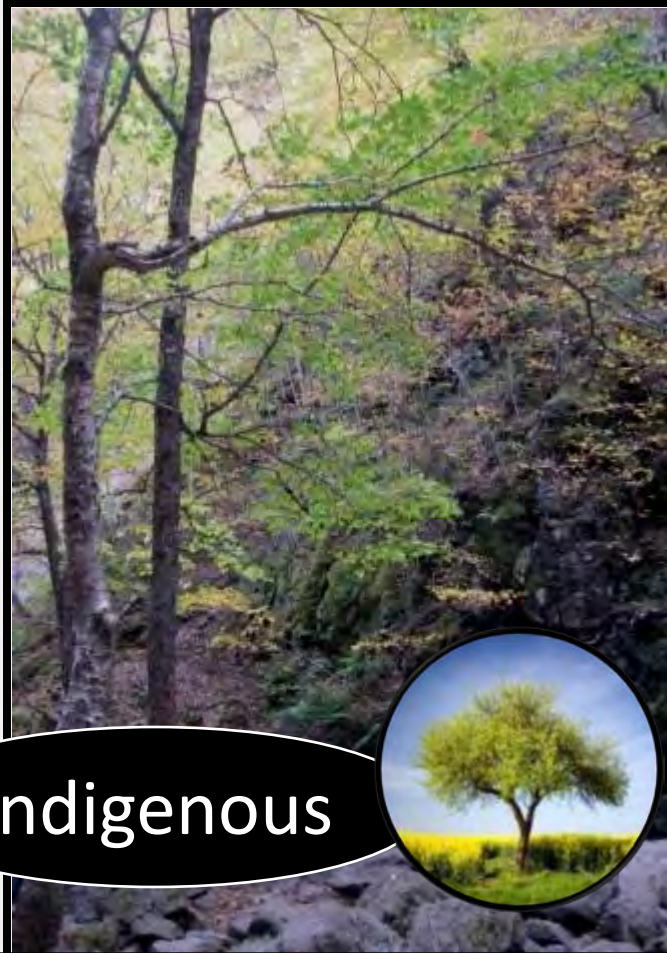
Indigenous

our worldviews

Western

“bringing our knowledges together”

Integrative Science



Indigenous

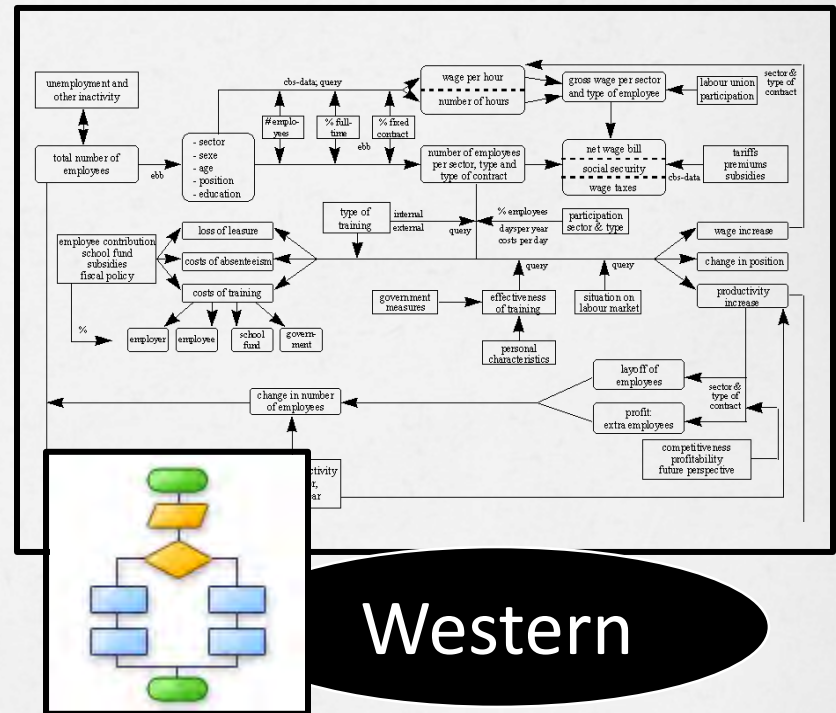
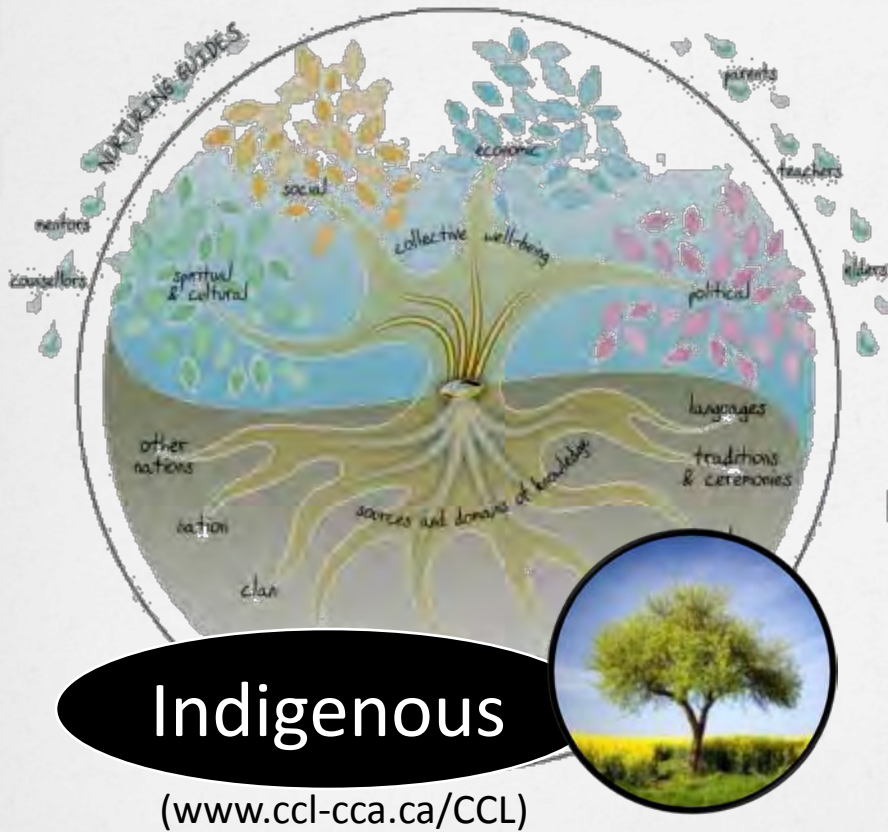
towards resonance of
understanding within environment



Western

towards construction of
understanding of environment

Integrative Science



Lifelong Learning Models

Integrative Science



Indigenous

Artist Gerald Gloade
Millbrook First Nation



Western

photo credit: NRC

Integrative Science

KEY CONCEPTS and ACTIONS

Indigenous

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

Western

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



TWO-EYED SEEING

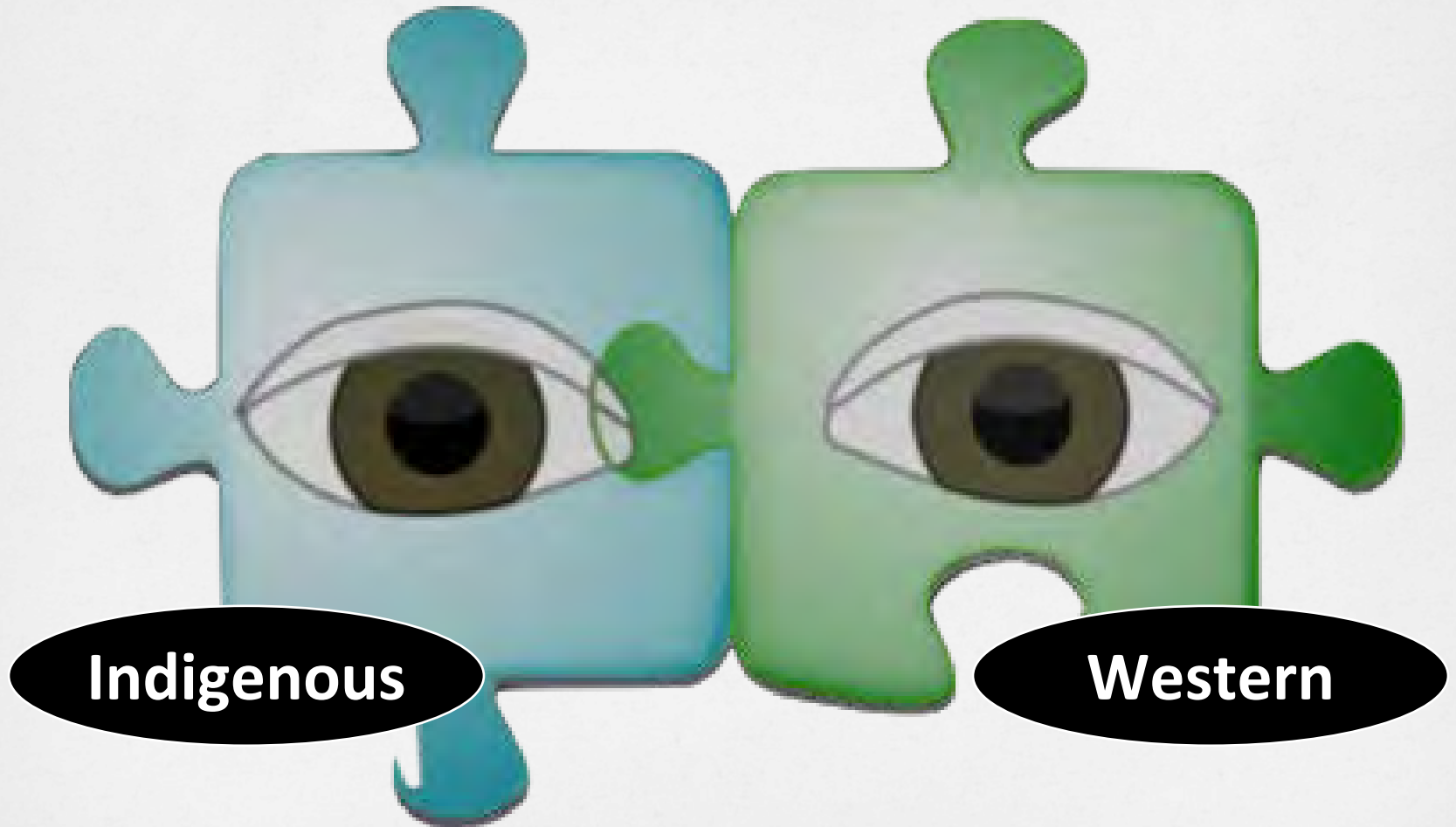
a Guiding Principle
for trans-cultural collaboration
(the Gift of Multiple Perspectives)

**LEARN ... to see from one eye with
the best in the Indigenous ways of
knowing, and from the other eye
with the best in the Western (or
mainstream) ways of knowing**

**... and LEARN to use both these
eyes together for the benefit of all.**

(words of Mi'kmaw Elder Albert Marshall)

ETUAPTUMUK - TWO-EYED SEEING





The phrase "**Two-Eyed Seeing**" was coined in Fall 2004 by Mi'kmaw Elder Albert Marshall of Eskasoni who indicates that it represents a traditional understanding about the gift of multiple perspectives and that, moreover, this gift is treasured by many Aboriginal peoples. For our current times, Elder Albert explains that Two-Eyed Seeing refers to learning to see from one eye with the strengths of, or the best in, the Indigenous knowledges and ways of knowing, and from the other eye with the strengths of, or the best in, the Western (or mainstream) knowledges and ways of knowing, and to using both these eyes together, for the benefit of all. Thus, Two-Eyed Seeing is a guiding principle that speaks directly to the setting of collaborative, cross-cultural and trans-cultural work; it intentionally seeks to avoid the situation of such work becoming a clash between knowledges, or domination by one worldview, or assimilation by one worldview of the knowledge of another.



Two-Eyed Seeing, when pursued with integrity, is exceedingly challenging work. Willie Ermine (2007), for example, points to the precarious relationship between Indigenous peoples and the Western world. And Elder Albert in conjunction with his wife Elder Murdena indicates that “we recognize that Traditional Knowledge draws upon Tribal Consciousnesses, while we also recognize that the latter tends to be negated by too much formal education and that our times place an overwhelming emphasis on formal education. We must, therefore, be diligent in taking the best from our two worlds: Indigenous and Western. We recognize, for example, that Western science privileges objectivity and de-emphasizes the human element, yet we depend heavily upon it and its technologies in our modern lives. Nevertheless, for the benefit of all humans, our times need to learn to factor the human element into science and to rediscover our humility as but one species on the planet”.



Two-Eyed Seeing further helps us to acknowledge the distinct and whole nature of the Indigenous knowledges and ways of knowing (such are represented as a whole eye) and the distinct nature of the Western knowledges and ways of knowing (such are also represented as a whole eye), while asking that these two eyes work together (as they do in true binocular vision). Nevertheless, it may be that in a particular set of circumstances we will choose to call upon the strengths within Indigenous knowledges, whereas in another set of circumstances we might choose to call upon those within the Western knowledges. Thus, Two-Eyed Seeing can require a “weaving back and forth” between knowledges, and this will always draw upon abilities to meaningfully and respectfully engage in informed and reciprocal manners - to "co-learn".



In putting forward Two-Eyed Seeing, Elder Albert has passionate concerns for the well-being and future of Aboriginal peoples and their traditional knowledges, as is evident when he states what happens in its absence: “When you force people to abandon their ways of knowing, their ways of seeing the world, you literally destroy their spirit and once that spirit is destroyed it is very, very difficult to embrace anything – academically or through sports or through arts or through anything – because that person is never complete. But to create a complete picture of a person, their spirit, their physical being, their emotions, and their intellectual being ... all have to be intact and work in a very harmonious way”.





TWO-EYED SEEING

learning to see with the strengths of each & together

OUR OVERALL KNOWLEDGE OBJECTIVES

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

Indigenous

**towards resonance of
understanding within environment**

dynamic, testable,
published knowledge
independent of personal
experience that can
enable prediction and
control
(and "progress")

Western

**towards construction of
understanding of environment**

Artist Basma Kavanagh



Elder Albert Marshall
Mi'kmaw Nation



**The foundational basis for any relationship
is an exchange of stories.**

(words of Elder Albert Marshall, Mi'kmaw Nation)

our science stories



Catastrophic tidal expansion in the Bay of Fundy, Canada

by: John Shaw, Carl L. Amos, David A. Greenberg, Charles T. O'Reilly, D. Russell Parrott, and Eric Patton

2010 ARTICLE in:
Canadian Journal of Earth Sciences
47(8): 1079–1091

with permission of Artist Gerald Goade, Millbrook First Nation



our science stories

Table 1 (continued).

Location	Age (radiocarbon years BP)	Lab No.	Material	Elevation (metres geodetic datum)	References
Kingsport	2905±220	GX-6811	SMP	-0.5000	Scott and Greenberg 1983
Kingsport	4430±235	GX-6810	SMP	-3.6000	Scott and Greenberg 1983
Beausejour	1335±130	GX-8141	SMP	3.6000	Scott and Greenberg 1983
Beausejour	2185±145	GX-8142	SMP	1.5000	Scott and Greenberg 1983
Beausejour	2620±145	GX-8143	SMP	-0.3000	Scott and Greenberg 1983
Beausejour	3800±160	GX-8145	SMP	-5.6000	Scott and Greenberg 1983
Mary's Point	2225±160	GX-8146	SMP	2.5000	Scott and Greenberg 1983
Mary's Point	3130±180	GX-8147	SMP	0.7000	Scott and Greenberg 1983
Mary's Point	3240±160	GX-8148	SMP	-0.2000	Scott and Greenberg 1983
Mary's Point	3640±180	GX-8145	SMP	-4.0000	Scott and Greenberg 1983
Aulac	2500±60	Beta-65696	SMP	1.7000	This paper
Aulac	2100±60	Beta-65695	SMP	1.8300	This paper

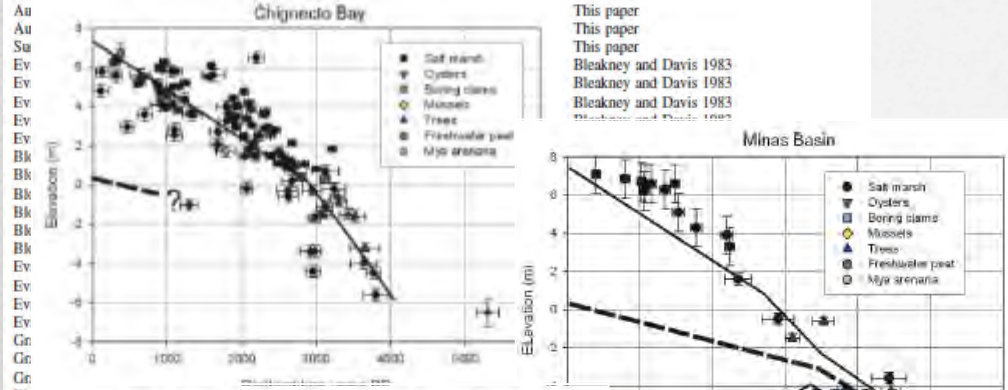


Fig. 5. Modeling results showing changes in tidal amplitude at five locations in the study area.

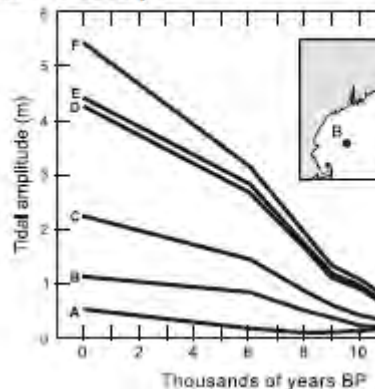
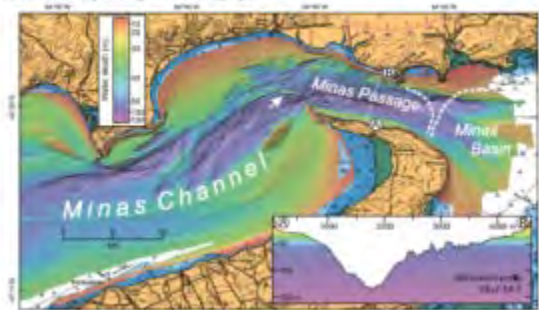


Fig. 6. Top: Photograph of Minas Passage based on multibeam bathymetry. Inset: interpretation. White arrow on top image indicates position of a beach ridge extending southwest from Cape Syle.



We argue that the catastrophic breakdown of the barrier is related in the legend, showing that Aboriginal peoples observed the rapid environmental changes and preserved an oral record for 3400 years.

last sentence in ABSTRACT for:
Shaw et al. 2010

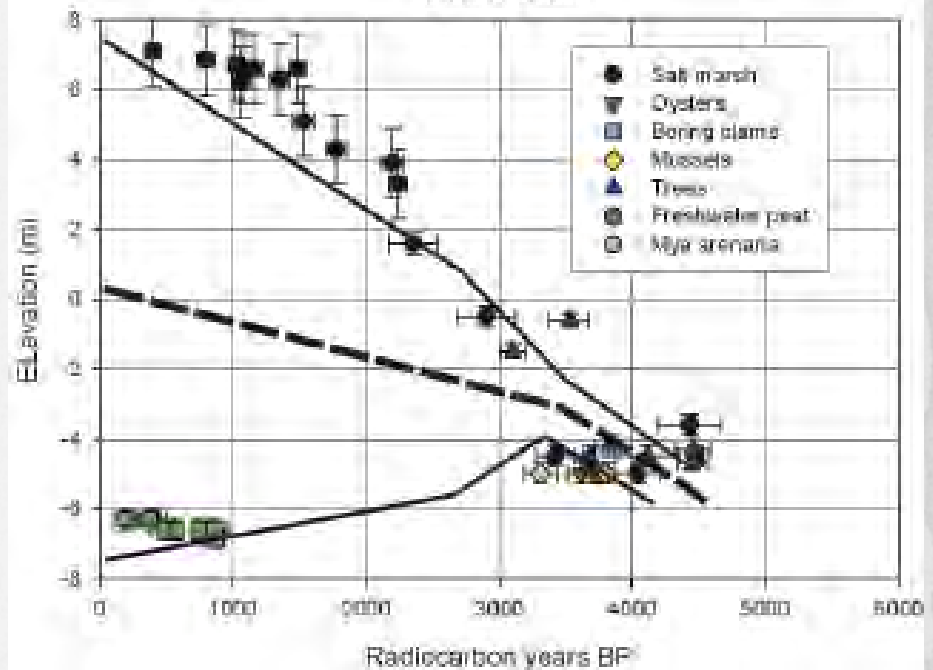
our science stories



with permission of Artist Gerald Gloade

**towards resonance of
understanding within environment**

Fig. 4. Palaeoindicator data from Minas Basin.



NRC Press Research Journals
Shaw et al. 2010; CJES 47: 1086

**towards construction of
understanding of environment**



patterns

“thing”

difference

pattern

human
consciousness

variation
and
diversity

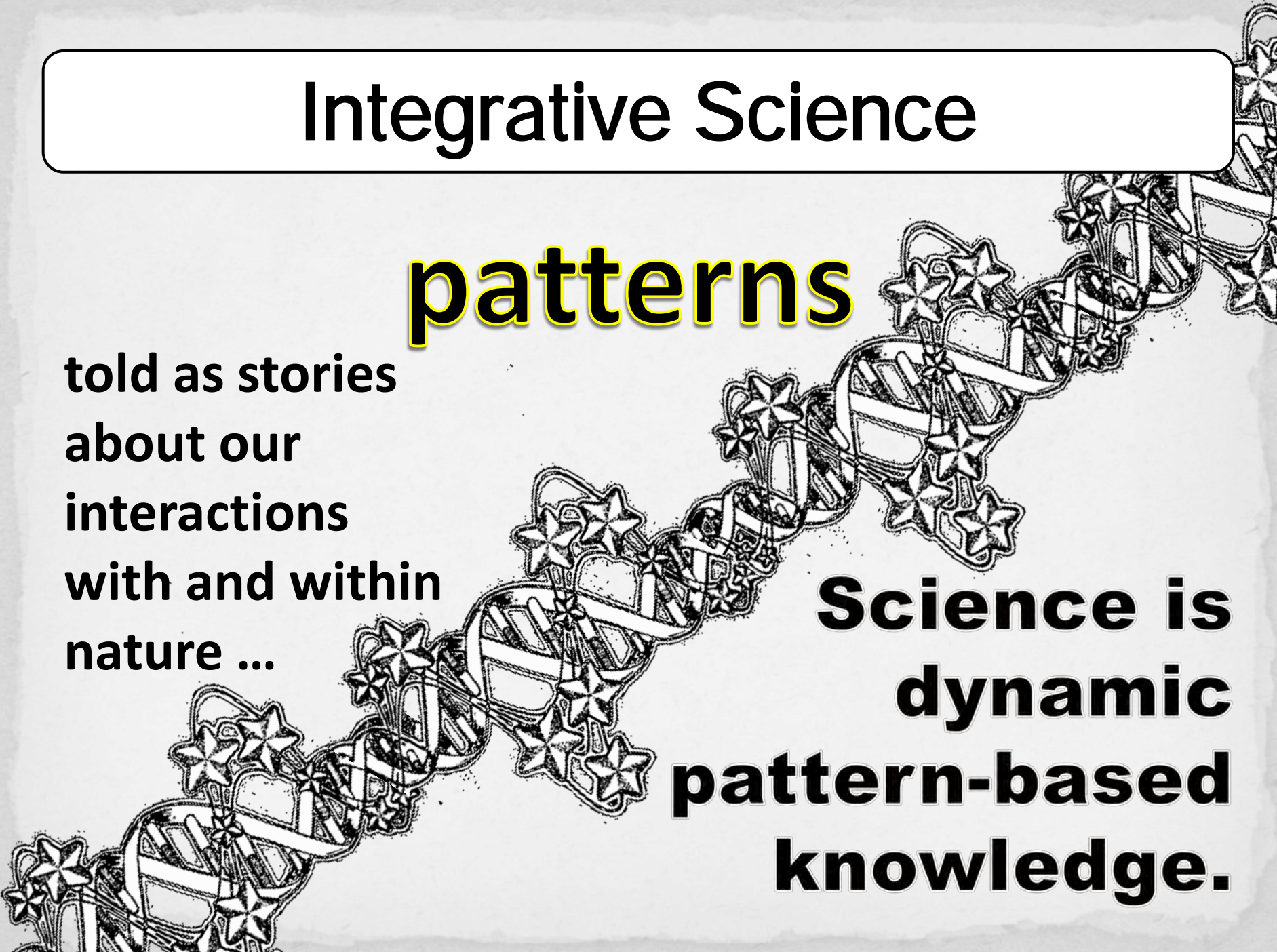


Integrative Science

patterns

told as stories
about our
interactions
with and within
nature ...

**Science is
dynamic
pattern-based
knowledge.**



**Connect the dots ... see patterns
... make stories.**

**Various ways to connect the dots
result in diversity in our stories.**

our science stories ...
draw upon our "pattern smarts"

word smarts

math smarts

music smarts

nature smarts

picture smarts

spirit smarts

body smarts

self smarts

people smarts



**WHAT STORIES ... depends upon:
SANCTIONED PERSPECTIVES & INTELLIGENCES**

who we are; where we are; where we were;
what we know, do and value

science stories that ... acknowledge few "pattern smarts"

word smarts

math smarts

nature smarts

music smarts

picture smarts

body smarts

people smarts

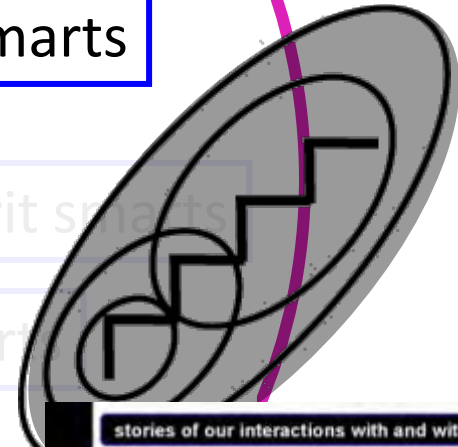
spirit smarts

self smarts

Howard Gardner's
"multiple
intelligences
theory"



SANCTIONED "SMARTS":
who we are; where we are; where we were;
what we know, do and value



stories of our interactions with and within nature

Science

A standard periodic table of elements, color-coded by groups.

Periodic Table of the Elements

photo credit: NRC



Western Science

A periodic table of elements is displayed, with a large, stylized black outline overlaid on it. The outline is a thick, irregular shape that follows the general path of the periodic table, starting from the top left and moving towards the bottom right, with several loops and turns. The elements are color-coded by groups: Group 1 (purple), Group 2 (blue), Groups 3-10 (green), Groups 11-12 (teal), Groups 13-18 (pink), and the lanthanide and actinide series (orange and yellow).

1 H Hydrogen																	2 He Helium
3 Li Lithium	4 Be Beryllium											5 B Boron	6 C Carbon	7 N Nitrogen	8 O Oxygen	9 F Fluorine	10 Ne Neon
11 Na Sodium	12 Mg Magnesium											13 Al Aluminum	14 Si Silicon	15 P Phosphorus	16 S Sulfur	17 Cl Chlorine	18 Ar Argon
19 K Potassium	20 Ca Calcium	21 Sc Scandium	22 Ti Titanium	23 V Vanadium	24 Cr Chromium	25 Mn Manganese	26 Fe Iron	27 Co Cobalt	28 Ni Nickel	29 Cu Copper	30 Zn Zinc	31 Ga Gallium	32 Ge Germanium	33 As Arsenic	34 Se Selenium	35 Br Bromine	36 Kr Krypton
37 Rb Rubidium	38 Sr Strontium	39 Y Yttrium	40 Zr Zirconium	41 Nb Niobium	42 Mo Molybdenum	43 Tc Technetium	44 Ru Ruthenium	45 Rh Rhodium	46 Pd Palladium	47 Ag Silver	48 Cd Cadmium	49 In Indium	50 Sn Tin	51 Sb Antimony	52 Te Tellurium	53 I Iodine	54 Xe Xenon
55 Cs Cesium	56 Ba Barium	57-58 La Lanthanum	72 Hf Hafnium	73 Ta Tantalum	74 W Tungsten	75 Re Rhenium	76 Os Osmium	77 Ir Iridium	78 Pt Platinum	79 Au Gold	80 Hg Mercury	81 Tl Thallium	82 Pb Lead	83 Bi Bismuth	84 Po Polonium	85 At Astatine	86 Rn Radon
87 Fr Francium	88 Ra Radium	89-90 Ac Actinium	104 Unq Unquadium	105 Unp Unpentium	106 Unh Unhexium	107 Uns Unseptium	108 Uuo Unoctium	109 Uuh Unnonium	110 Uuq Unquadrium	111 Uub Unbium	112 Uuo Unoctium	113 Uut Untrium	114 Uuq Unquadrium	115 Uup Unpentium	116 Uuq Unquadrium	117 Uuh Unhexium	118 Uuo Unoctium
		91 La Lanthanum	92 Ce Cerium	93 Pr Praseodymium	94 Nd Neodymium	95 Pm Promethium	96 Sm Samarium	97 Eu Europium	98 Gd Gadolinium	99 Tb Terbium	100 Dy Dysprosium	101 Ho Holmium	102 Er Erbium	103 Tm Thulium	104 Yb Ytterbium	105 Lu Lutetium	
		101 Ac Actinium	102 Th Thorium	103 Pa Protactinium	104 U Uranium	105 Np Neptunium	106 Pu Plutonium	107 Am Americium	108 Cm Curium	109 Bk Berkelium	110 Cf Californium	111 Es Einsteinium	112 Fm Fermium	113 Md Mendelevium	114 No Nobelium	115 Lr Lawrencium	

Universe: Visible Matter (levels of organization - biology)

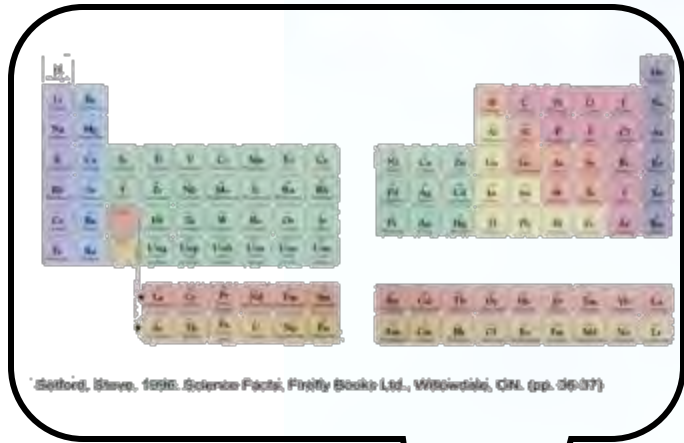


Setford, Steve, 1996. Science Facts, Freely Books Ltd., Witley, UK. (pp. 36-37)

- ▣ Universe
- ▣ super clusters (Local)
- ▣ clusters (Local Group)
- ▣ galaxies (Milky Way)
- ▣ star systems (Sun)
- ▣ planet Earth
- ▣ ecosystems
- ▣ communities
- ▣ populations
- ▣ organisms
- ▣ organ systems
- ▣ organs
- ▣ tissues
- ▣ cells
- ▣ organelles
- ▣ molecules & minerals
- ▣ atoms (natural elements #1-92; artificial elements #93 & higher)
- ▣ baryons (neutrons & protons)
- ▣ fundamental particles (quarks & leptons)

Western Science

Universe: Visible Matter (levels of organization - biology)



Setford, Steve, 1996. Science Facts, Firefly Books Ltd., Windsorale, ON. (pp. 06-07)



- ▣ Universe
 - ▣ super clusters (Local)
 - ▣ clusters (Local Group)
 - ▣ galaxies (Milky Way)
 - ▣ star systems (Sun)
 - ▣ planet Earth
 - ▣ ecosystems
 - ▣ communities
 - ▣ populations
 - ▣ organisms
 - ▣ organ systems
 - ▣ organs
 - ▣ tissues
 - ▣ cells
 - ▣ organelles
 - ▣ molecules & minerals
 - ▣ elements #1-92; artificial

Western Science

SCIENCE stories of:

parts & wholes

my world is many "its" (objects)

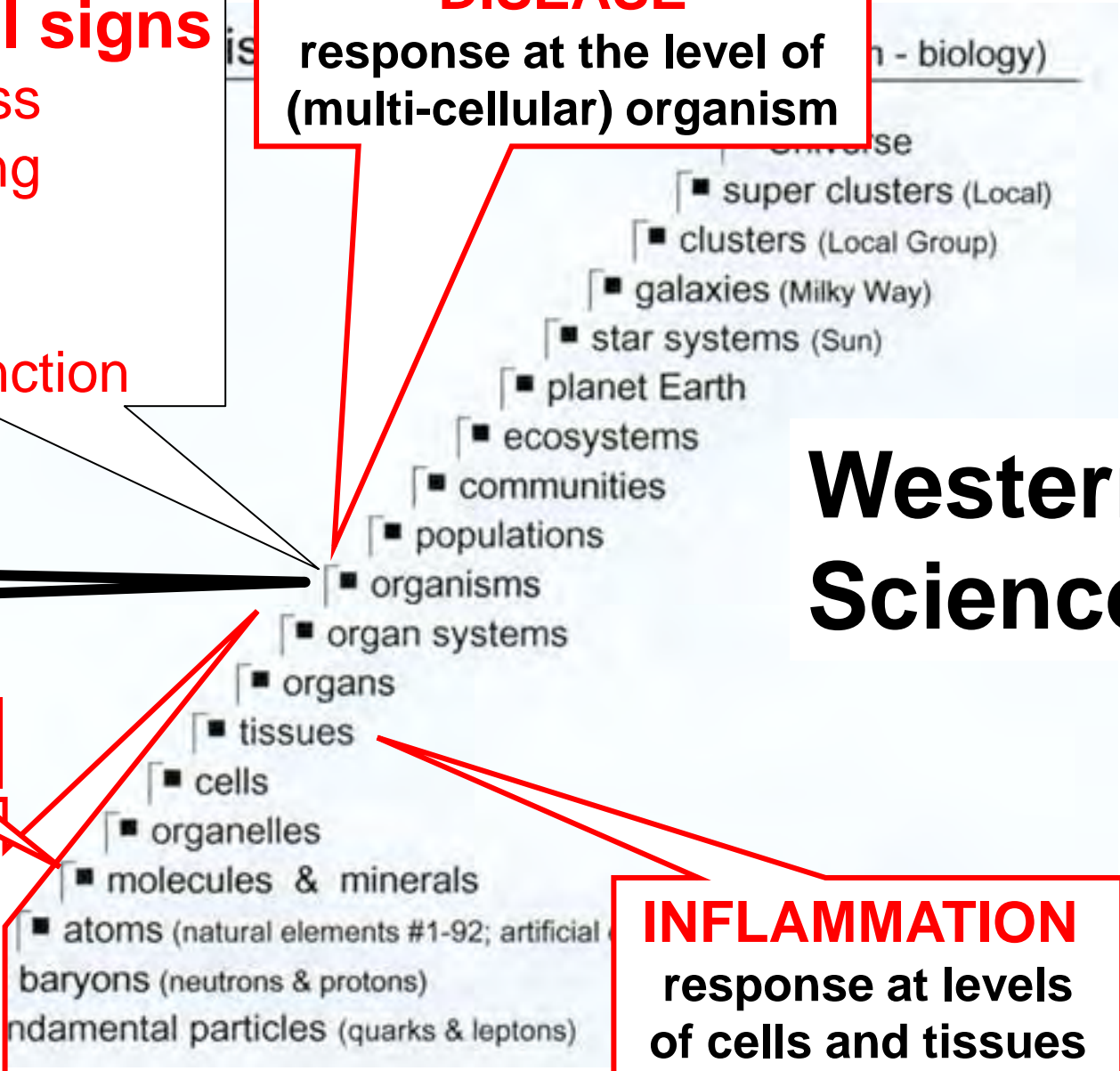
objective (... but)
e.g. cardinal signs

- redness
- swelling
- heat
- pain
- loss of function

signs and symptoms

subjective

DISEASE
response at the level of
(multi-cellular) organism



Western Science

DRUGS

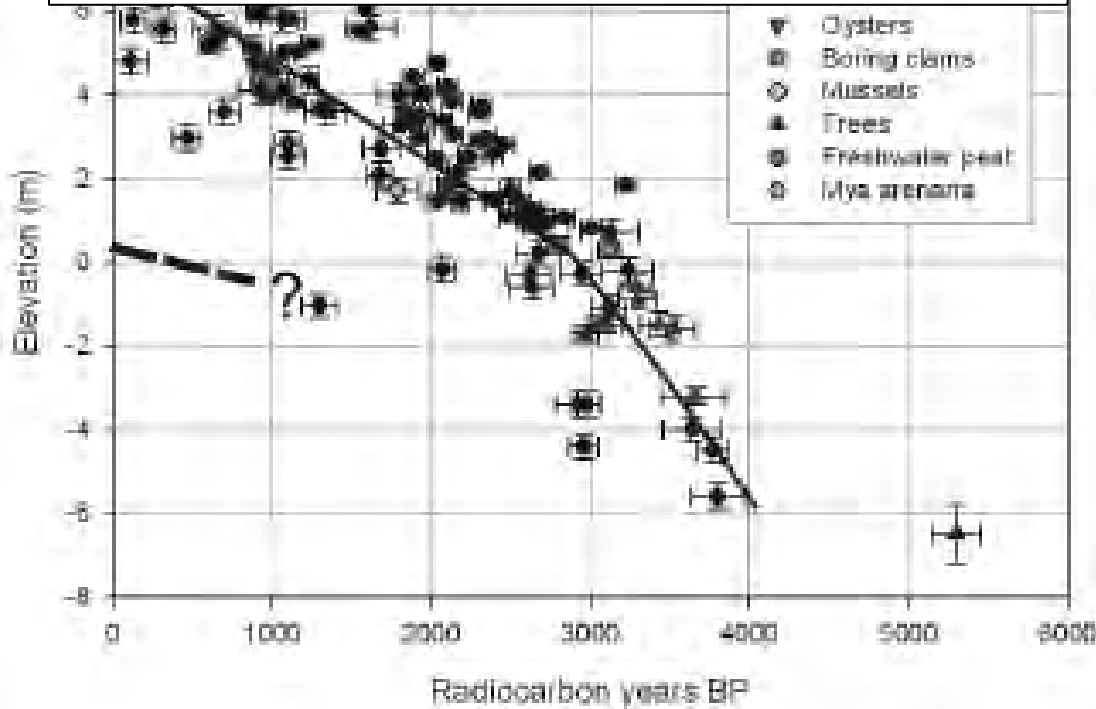
... to treat at higher levels in the (multi-cellular) organism

objective (... but)

e.g. cardinal signs

DISEASE

language: mathematics



Western Science

higher levels
in the
(multi-cellular)
organism

INFLAMMATION
response at levels
of cells and tissues

science stories that ... draw upon many "pattern smarts"

word smarts

math smarts

music smarts

nature smarts

picture smarts

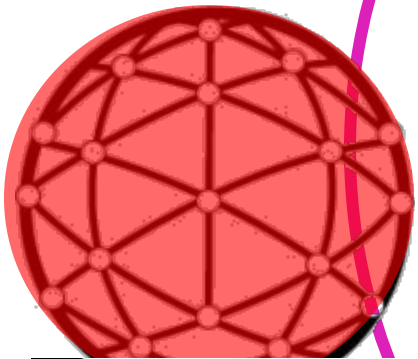
spirit smarts

body smarts

self smarts

people smarts

*Howard Gardner's
"multiple
intelligences
theory"*

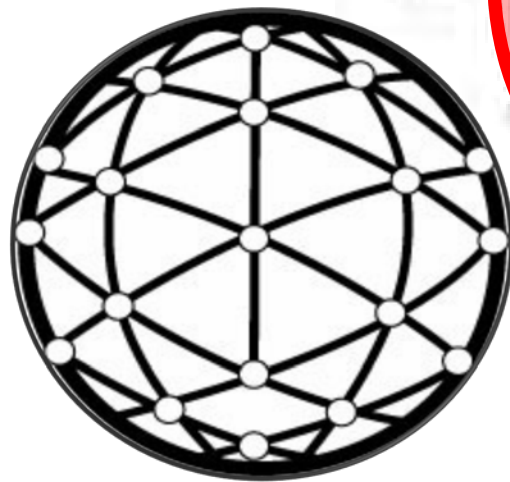


SANCTIONED "SMARTS":
who we are; where we are; where we were;
what we know, do and value

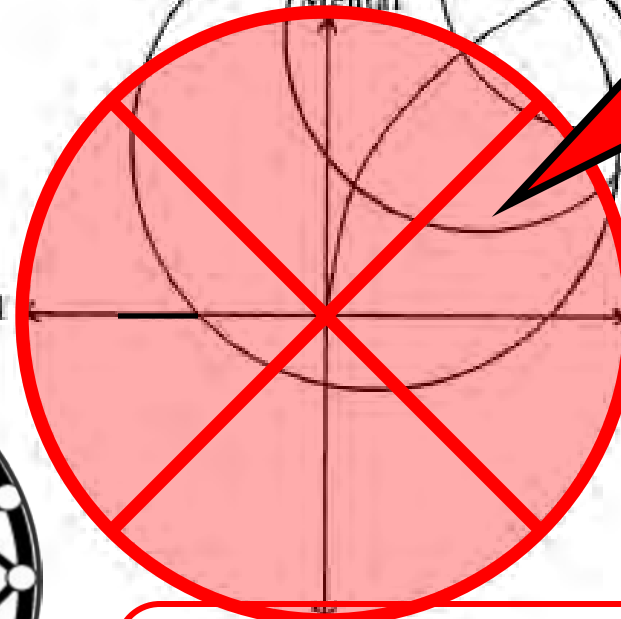
stories of:

Indigenous Knowledges

interconnectiveness



Physical

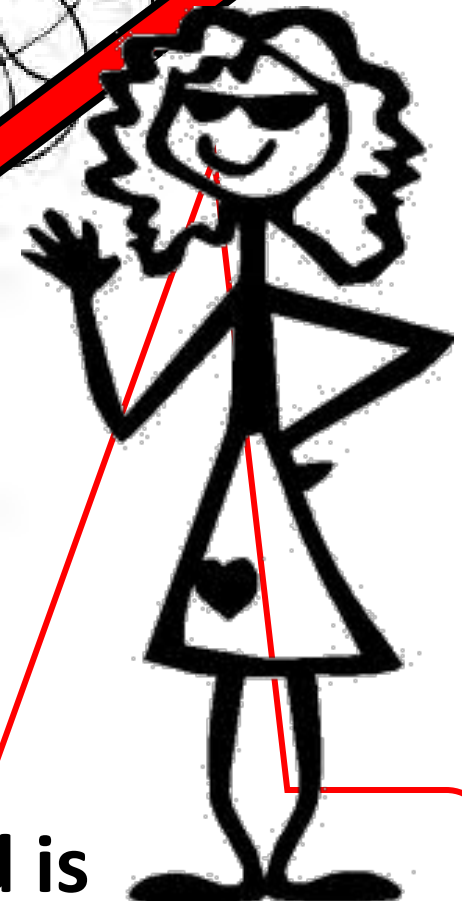


Mental

Spiritual

Emotional

~~Vision~~



my world is
"all my relations" (subjects)

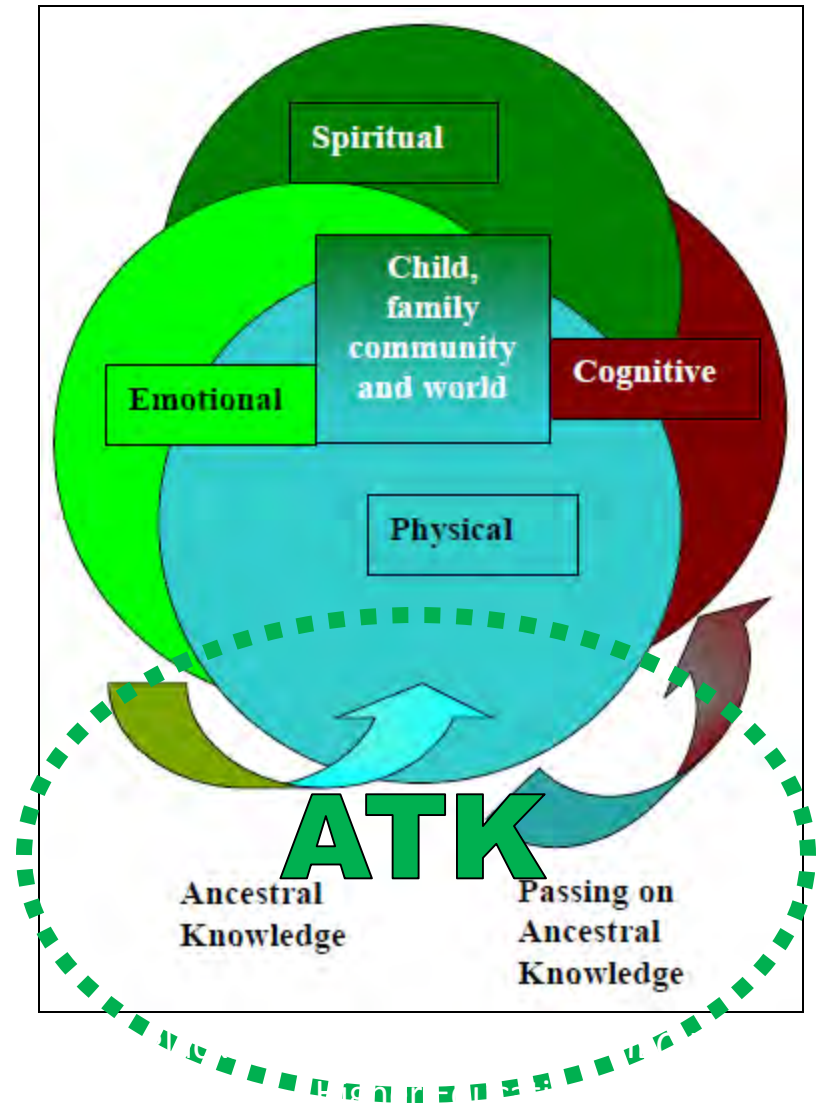
stories of: Indigenous Knowledges

interconnectiveness

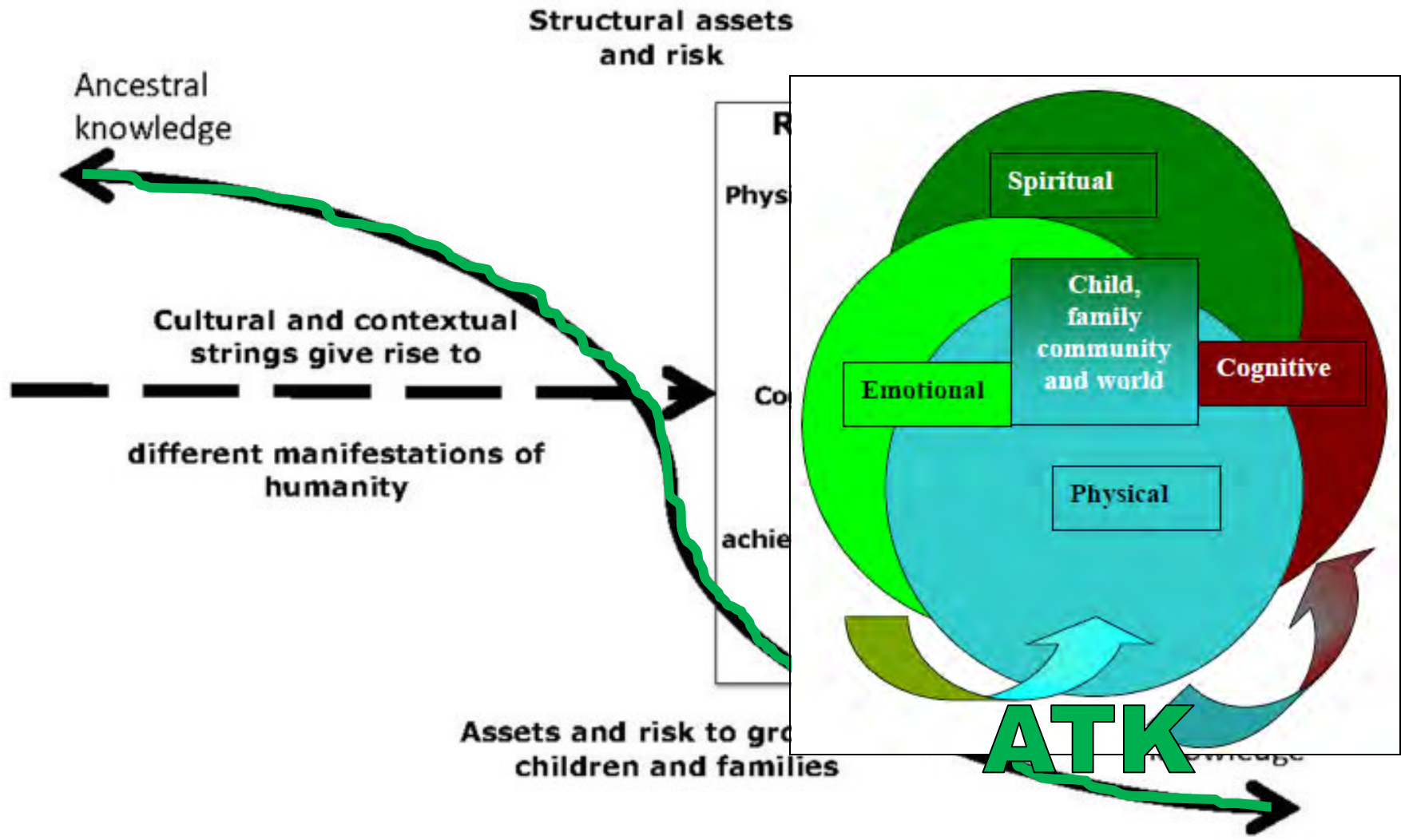


four aspects of being human

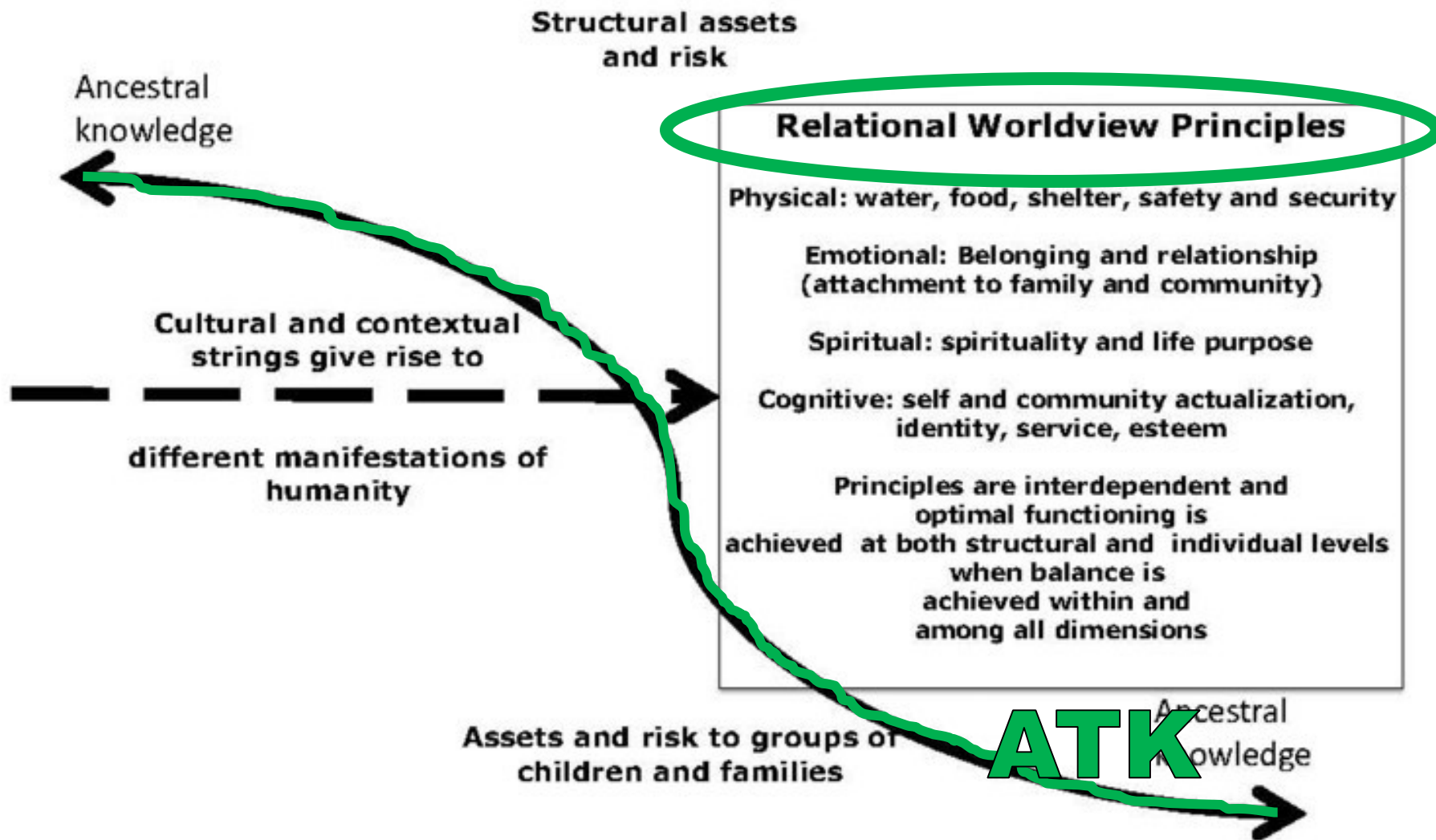




Blackstock 2011: model for Breath of Life Theory (with 2007 overlay)



Blackstock 2011: model for Breath of Life Theory – healthy communities

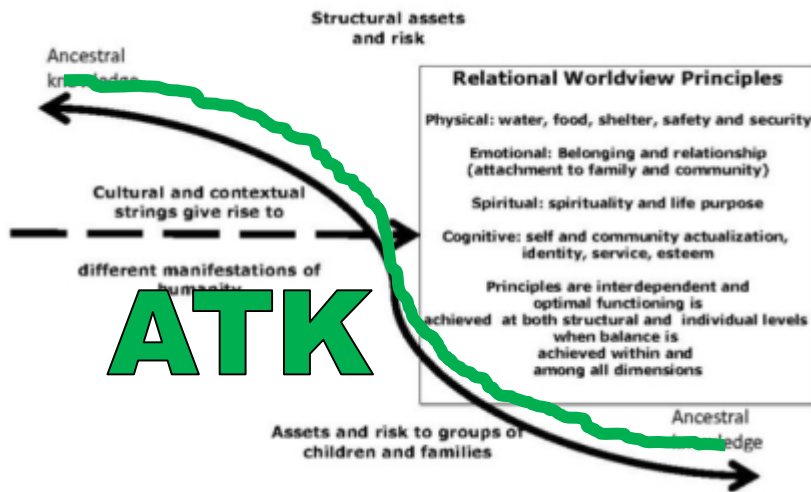


Indigenous

Western

**The challenge is to bring together
the strengths from both so as
not to compromise the integrity of Mother Earth.**

words of Elder Albert Marshall



Cindy Blackstock 2011; Fig. 4 - Breath of Life Theory;
Journal of Social Work Values & Ethics, Vol. 8, No. 1.

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[Western] Science is distinguished from other pursuits by the precise and limited intellectual means that it employs and the integrity with which it uses its limited means.

The scientific pursuit of truth uses no end of tools, ranging from sensitive scales to register the weight of a hair to observatories of the heavens.

Jane Jacobs, p. 65, 2004. Dark Age Ahead. Vintage Canada.



TWO-EYED SEEING

a Guiding Principle
for trans-cultural collaboration
(the Gift of Multiple Perspectives)

**LEARN ... to see from one eye with
the best in the Indigenous ways of
knowing, and from the other eye
with the best in the Western (or
mainstream) ways of knowing**

**... and LEARN to use both these
eyes together for the benefit of all.**

(words of Mi'kmaw Elder Albert Marshall)

ELDERS MAWIO'MI

12-14 August 2010, Millbrook FN

Honouring Traditional Knowledge

**23 Elders from four
Aboriginal cultures
of Atlantic Canada**

- Mi'kmaq
- Wolastoqiyik (Maliseet)
- Innu
- Inuit





**APCFNC/AAEDIRP
Elders
Research Project**

Honouring Traditional Knowledge



ELDERS' RECOMMENDATIONS

Recommendations concern all aspects of Aboriginal community life, including economic development, fisheries, health, social, law, environment, and education, etc.

[approved by Atlantic Chiefs, 29 Sept 2011]



Atlantic Policy Congress
Of First Nations Chiefs Secretariat
www.apcnc.ca



APCFNC/AAEDIRP Elders Research Project

BACKGROUND

The Atlantic Policy Congress of First Nations Chiefs (APCFNC) brings together 38 First Nations in the Atlantic region of Canada as well as the 10,000 Inuit in Labrador. Through the Atlantic Aboriginal Economic Development Integrated Research Program (AAEDIRP) administered by the APCFNC, Atqopiik, Innu, and Inuit Elders have been involved in a project since 2009.

The critical importance of consulting with Elders and having city economic development projects and in research on

issues for the project. The project was supported by APCFNC resources. As a foundation for the work on economic development in Atlantic region Elders on how they would like to be consulted and Aboriginal worldviews. As part of the project, the Elders have met concerning Traditional Knowledge and its importance.

Following reviewed the eight recommendations. General Meeting on September 29, 2011, resolutions put forward by Atlantic Region All Chiefs' Resolution #2.011-14.

Chief M/soel Joe, Miawpukek First Nation
Chief Roderick Goggin, Waycubah First Nation
AGCN: Passed by consensus
TE: September 29, 2011

TRADITIONAL KNOWLEDGE COMPONENTS

10
Sharing in Miawpukek brought together Elders from four nations — the Mi'kmaq, the Wolastoqiyik, the Innu, and the Inuit. Shared in Miawpukek First Nation at the Glenskap Heritage Park to be videotaped. They directed that a transcription of the purposes.

al Knowledge
and Traditional Knowledge. Under the Elders' guidance the the Elders' list is shared. It can be viewed by going to

concerning Traditional Knowledge. The recommendations are Mental. See next page.

advice and best practices for the sharing of Traditional Atlantic region Elders in research. It contains community living document that will be added to an ongoing basis.

ELDERS RECOMMENDATIONS

The following is the list of recommendations from the APCFNC Elders Project Honoring Traditional Knowledge. It is an initial list concerning how Elders would like to be consulted when sharing Traditional Knowledge. Reading and acknowledging this list of recommendations should not be considered a form of consultation with Atlantic Aboriginal communities.

It needs to be recognized that Atlantic Aboriginal communities are losing their Elders, their knowledge may rapidly. Therefore, Aboriginal communities and importance of working alongside Elders and knowledge immediately.

involved in all aspects of the territorial, cultural, linguistic, and social affairs of Atlantic Aboriginal communities/regions what is most important because of their collective

work in all aspects of Aboriginal community life, including health, social, law, government, and education, etc.

meaningful ways and have advisory roles for all Aboriginal, implementation, and resolution taking place. Meaningful, members of steering committees and advisory committees re-consulting.

shared and passed on before it is lost. The ways in which on need to be directed by the Elders from each territory.

Elders that would advise on matters related to the sharing of focused for the Atlantic region. The Council would advise on the ethics and the best practices for the sharing of Traditional Knowledge for working alongside Elders. This would include working necessary life and development including research.

would engage in a process of co-learning with the Atlantic plans for how the process of this knowledge transfer could

developing and approving educational curricula related to Atlantic community schools and (post)secondary and post-secondary.

work into the social studies, science, and language, primary schools in Atlantic Aboriginal communities. This would location for Aboriginal learners, enable the communities learn and Aboriginal learning methods and better process re-paths.

It be requested to seek guidance from the Elders' Council (see #6) to develop appropriate curricula related to post-secondary programming.

It is to encourage the use of traditional practices, which are such as traditional laws, cultural and spiritual practices, language-learning and sharing, food gathering, medicine, ecology science.

[Honoring Traditional Knowledge.pdf](#)



INFORMATION PLEASE CONTACT:

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APCFNC
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APCFNC Elders Project:
**HONOURING
TRADITIONAL
KNOWLEDGE**



Atlantic Aboriginal Economic Development
Integrated Research Program



REPORT SYNOPSIS
<http://www.apcfnc.ca/en/resources/HonouringTraditionalKnowledgeFinal.pdf>

As Elders, we realize KNOWLEDGE IS SPIRIT.

It is a Gift passed on through many people. We must pass it on.

*words of
Elder Albert Marshall*



Artist Gerald Gloade; Millbrook First Nation

We Elders need
to share our
understandings of
Traditional Knowledge
to be healthy.



In sharing, I am
trying to live up to
the responsibility of
why I was given
that knowledge.

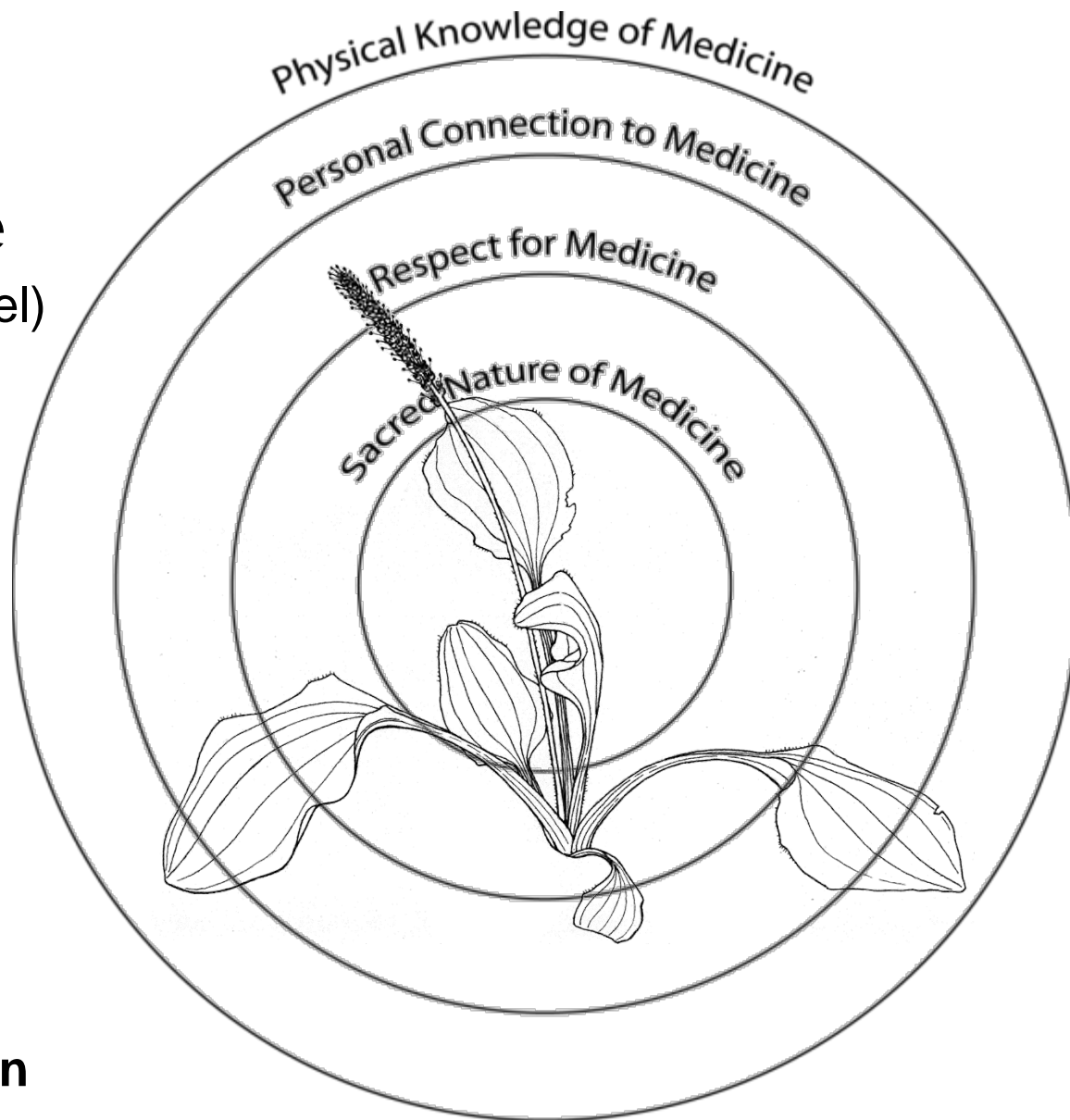
words of Elder Albert Marshall

Mi'kmaw Traditional Knowledge

(concentric circles model)



**Teachings of
Mi'kmaw Elder
Murdena Marshall
Eskasoni First Nation**



Mi'kmaw Seven Sacred Gifts of Life



**Teachings of
Elder Murdena Marshall**



(words of Elder Albert Marshall)

Our Mi'kmaw language is the key to how our actions will unfold. Each word is much deeper than only taking care of an object. Animacy brings personal connection ... such that actions fit actions (everything is in the picture) and we are always mindful of the ...

First Sacred Gift of Life: LOVE

EXAMPLES

- 1) pekajo'tmnej = consider all aspects
... *action is harmonious*
- 2) wulo'tmnej = love some one
... *action is care*
- 3) sespite'tmnej = worry about what you do
... *action is guided*



Elders
Wisdom
Thinking
Understanding
Analyzing
Integration



Light
Beginnings
Renewal
Hope
Courage

Darkness
The unknown
Perseverance
Reflection
Respect for
others' beliefs

Generosity
Determination
Goal setting
Ability to set aside
strong feelings in
order to serve others

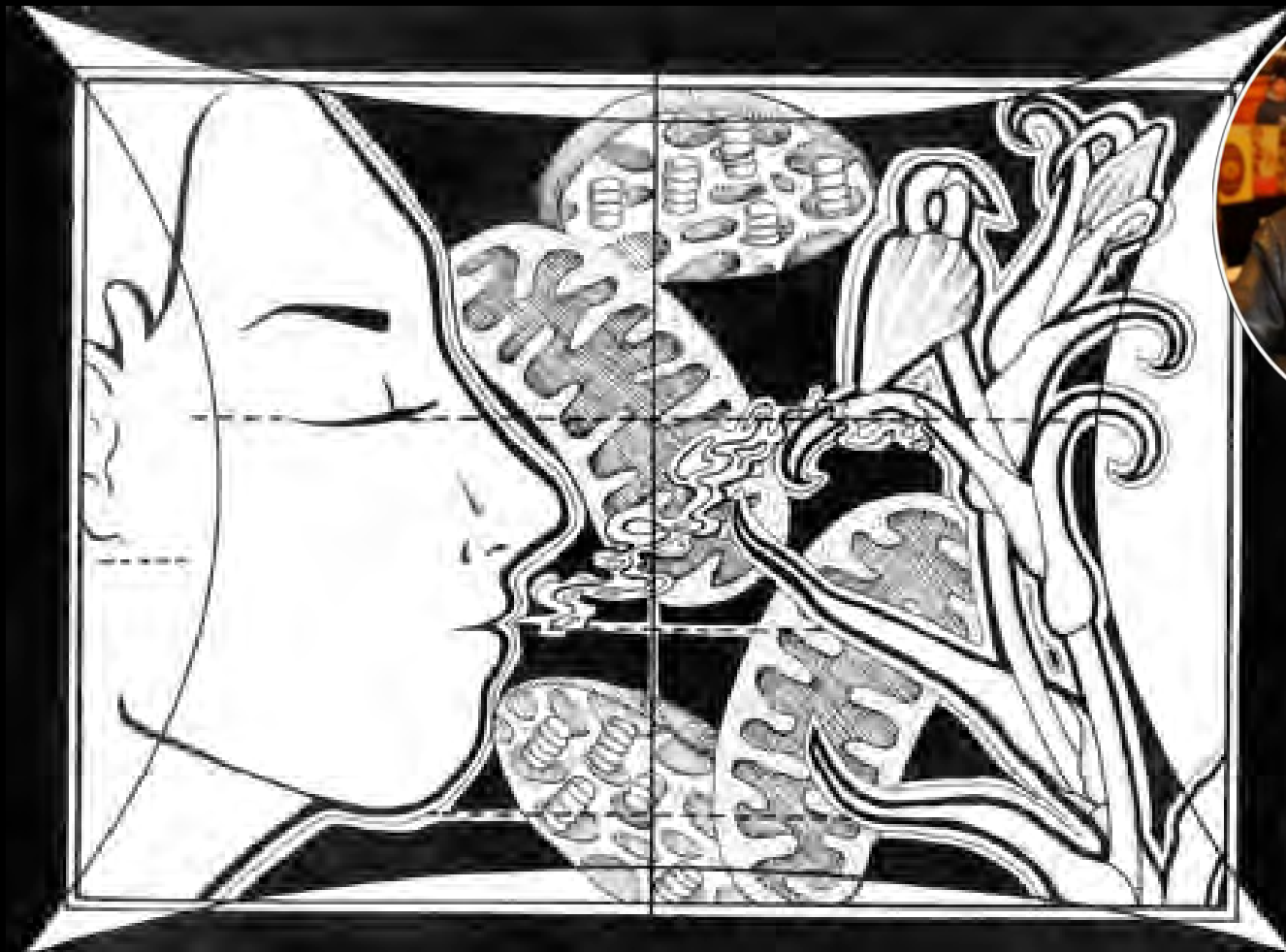
**All these
things that
Creator has
given us are
sustenance
in both the
physical and
spiritual
senses.**

words of
Mi'kmaw
Elder
Albert
Marshall



Artist Basma Kavanagh

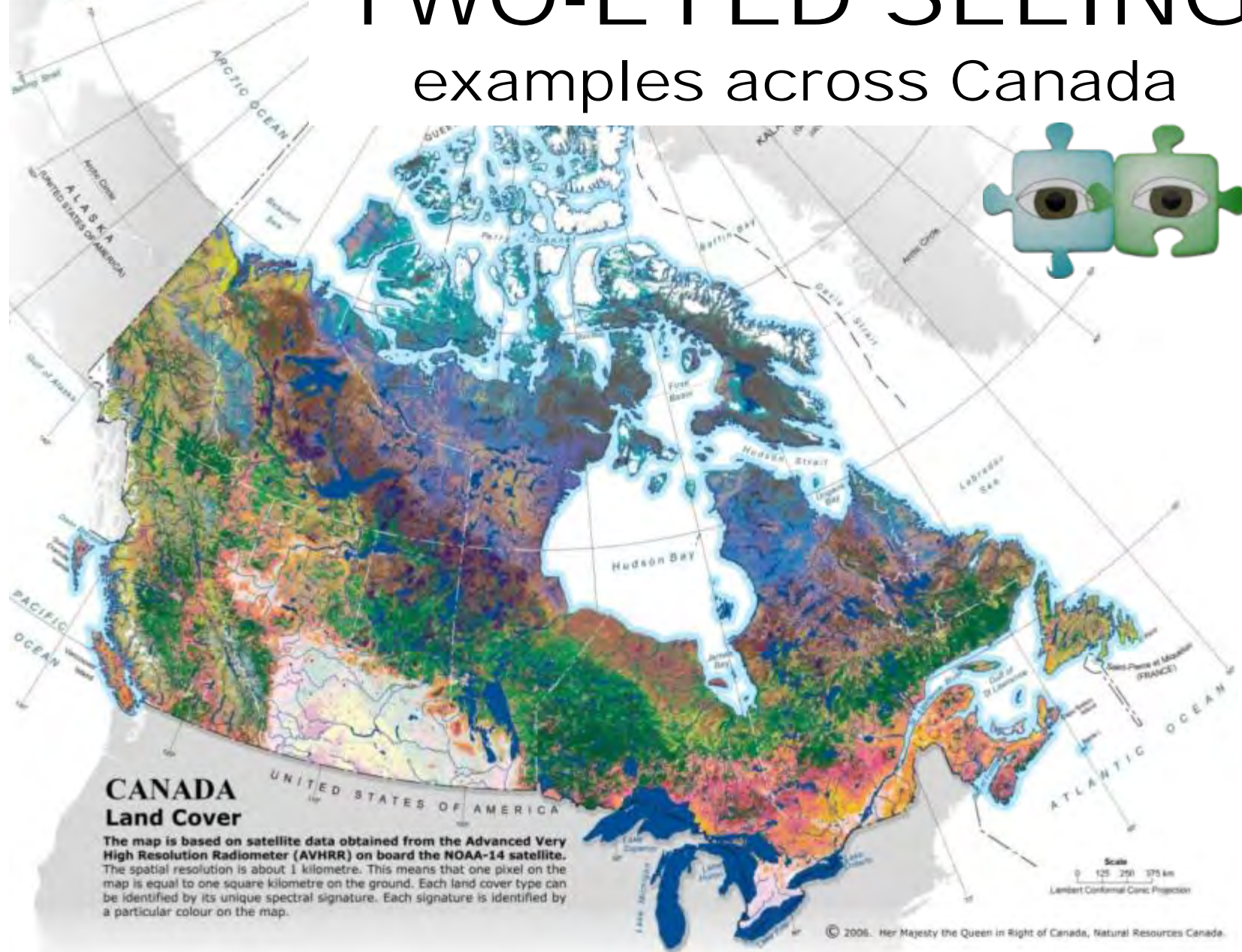
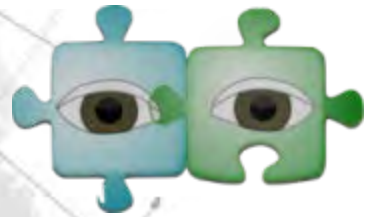
We must bring our Aboriginal Traditional Knowledge into the present so that everything becomes meaningful in our lives and communities. (words of Elder Murdena Marshall)



Artist Basma Kavanagh

TWO-EYED SEEING

examples across Canada



CANADA Land Cover

The map is based on satellite data obtained from the Advanced Very High Resolution Radiometer (AVHRR) on board the NOAA-14 satellite. The spatial resolution is about 1 kilometre. This means that one pixel on the map is equal to one square kilometre on the ground. Each land cover type can be identified by its unique spectral signature. Each signature is identified by a particular colour on the map.

Scale
0 125 250 375 km
Lambert Conformal Conic Projection

BRINGING ATK INTO DFO'S FISHERIES MANAGEMENT PLANNING CYCLE FOR SNOW CRAB (GULF MANAGEMENT AREA 12)

OVERALL: We know that some ingredients (e.g. programs, processes, research) are already in place. Our challenge is to integrate with them and/or expand upon them so we do not compromise the integrity of Mother Earth, not jeopardize the next Seven Generations.



Artist Gerald Gloade; Millbrook First Nation



Aboriginal Traditional Knowledge

Mi'kmaw Traditional Knowledge

Its "PRINCIPLE OF HUMILITY" is based on Lnu'k knowledge ... evolving for 10,000 years.



Extent of ice 11,000 years ago. People lived at the Debert site sometime between 11,000 and 10,000 years ago.

information source: signage on Mi'kmawey Debert Interpretive Trail

Mi'kmaw Traditional Knowledge



... we must bring Traditional Knowledge into the present so that everything becomes meaningful in our lives and communities

(words of Elder Murdena Marshall)

Mi'kmaw Traditional Knowledge

is “LIVING KNOWLEDGE”
and our language teaches us.



Mi'kmaw Traditional Knowledge

is “LIVING KNOWLEDGE”
and our language teaches us.



Language is much more than an instrument, considerably more than a tool. In structuring our thoughts, in coordinating our social relations and in building our relationship with reality, it constitutes a fundamental dimension of the human being. It is in and through language that we live.

message from the Director-General of UNESCO
on the occasion of International Mother Language Day

http://portal.unesco.org/en/ev.php-URL_ID=31787&URL_DO=DO_TOPIC&URL_SECTION=201.html

Netukulimk

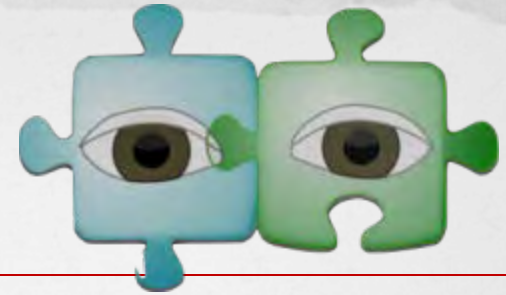


Humans possess responsibilities.
ALL OTHER SPECIES
POSSESS RIGHTS.

(words of Elder Albert Marshall)



TWO-EYED SEEING
is more than “just philosophy”!



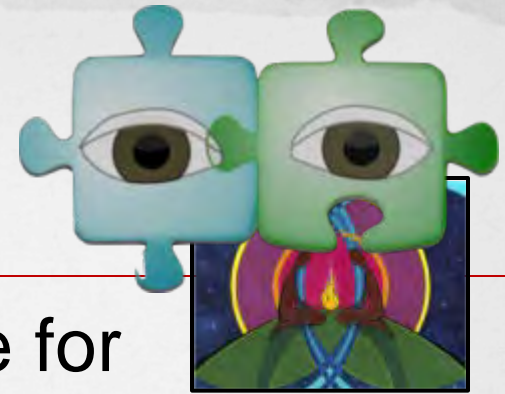
it can be viewed as a guiding principle for
TRANSDISCIPLINARY RESEARCH

TD research = a collaboration of representatives of different thought styles*

The term “transdisciplinary” has evolved from its more literal meaning of transcending the traditional boundaries of university-based research to include the participation of extra-academic stakeholders. While transcending discipline boundaries certainly remains an important activity of TD researchers, [others] have made reference to a range of related boundaries beyond discipline-based knowledge divides that TD researchers transcend. These include: affect/effect or fact/value; epistemological divides; and various systems conceptualization and boundary judgements. (p. 1147, in Carew, A.L. and Wickson, F. 2010. *The TD Wheel: a heuristic to shape, support, and evaluate transdisciplinary research. Futures 42: 1146-1155*)


***from: Pohl, C. 2011. What is progress in transdisciplinary research?
Futures 43: 618-626.
(p. 621)**

TWO-EYED SEEING is more than “just philosophy”!



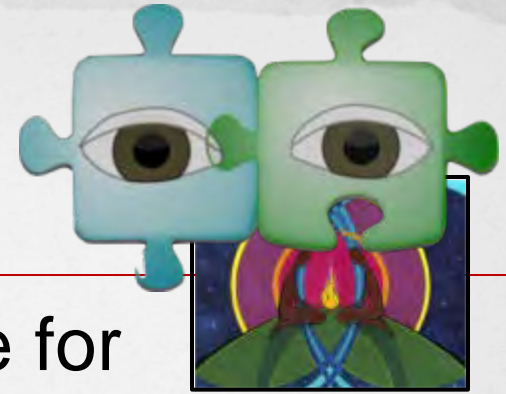
we chose it as a guiding principle for
INTEGRATIVE SCIENCE RESEARCH

***Table: Three concepts of transdisciplinarity as combinations of four features**

Transdisciplinarity according to concept	A	B	C
Features of transdisciplinarity			
Relating to socially relevant issues			
Transcending and integrating disciplinary paradigms			
Participatory research			
Searching for a unity of knowledge			

***from: Pohl, C. 2011. What is progress in transdisciplinary research?
Futures 43: 618-626.
(p. 620)**

TWO-EYED SEEING is more than “just philosophy”!



we chose it as a guiding principle for
CO-LEARNING

* **Four purposes for transdisciplinary research**

1. Grasp complexity of the socially relevant issue.
2. Take diverse perspectives on the issue into account.
3. Link abstract and case-specific knowledge.
4. Develop descriptive, normative, and practical knowledge that promotes what is perceived to be the common good.

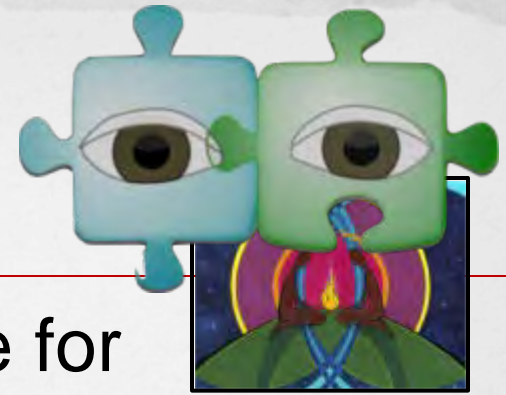
The 4th purpose means that one of the specific challenges for TD researchers is to ensure that value systems do not operate in the shadows and instead are clarified by jointly developing the meaning of [specific topics or concepts] for the research project's context.

**from:* Pohl, C. 2011. What is progress in transdisciplinary research?

Futures 43: 618-626.

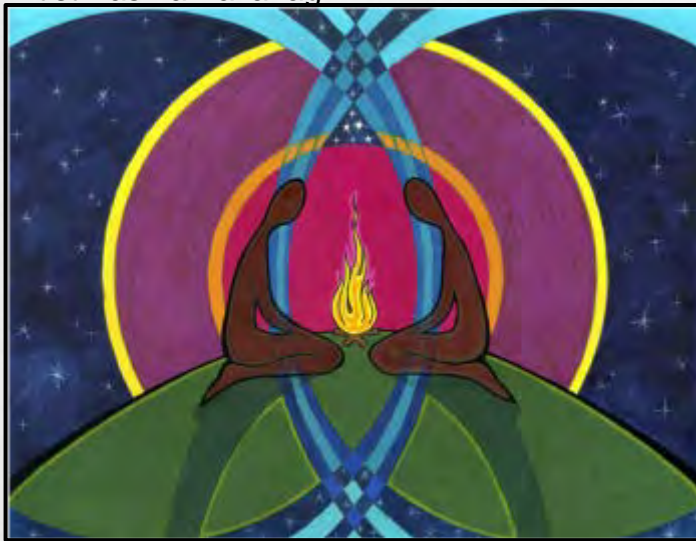
(p. 620)

TWO-EYED SEEING
is more than “just philosophy”!



we chose it as a guiding principle for
CO-LEARNING
a means to work meaningfully together

Artist Basma Kavanagh



In Unama’ki – Cape Breton,
a form of Co-Learning* has been
pioneered in various research projects
by Mi’kmaw Elders and educators and
the Integrative Science research team
at Cape Breton University.
Our approach continues to evolve.

* [http://www.integrativescience.ca/uploads/articles/2012-Bartlett-Marshall-Iwama-Integrative-Science-Two-Eyed-Seeing-enriching-discussion-framework\(authors-draft\).pdf](http://www.integrativescience.ca/uploads/articles/2012-Bartlett-Marshall-Iwama-Integrative-Science-Two-Eyed-Seeing-enriching-discussion-framework(authors-draft).pdf)

SOME READINGS (also see articles by Cindy Blackstock 2007 and 2011)

Bartlett, C., Marshall, M., and Marshall, A. 2012. Two-Eyed Seeing and other Lessons Learned within a co-learning journey of bringing together indigenous and mainstream knowledges and ways of knowing. *Journal of Environmental Studies and Sciences*, 2(4): 331-340. <http://www.integrativescience.ca/uploads/articles/2012-Bartlett-Marshall-Integrative-Science-Two-Eyed-Seeing-JESS.pdf>

Bartlett, C., Marshall, M., Marshall, A., and Iwama, M. Forthcoming. Integrative Science and Two-Eyed Seeing: Enriching the Discussion Framework for Healthy Communities. In "Beyond Intractability: convergence and opportunity at the interface of environmental, health and social issues"; edited by Lars K. Hallstrom, Nicholas Guehlstorf, and Margot Parkes. [Publication pending] [http://www.integrativescience.ca/uploads/articles/2012-Bartlett-Marshall-Iwama-Integrative-Science-Two-Eyed-Seeing-enriching-discussion-framework\(authors-draft\).pdf](http://www.integrativescience.ca/uploads/articles/2012-Bartlett-Marshall-Iwama-Integrative-Science-Two-Eyed-Seeing-enriching-discussion-framework(authors-draft).pdf)

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Iwama, M., Marshall, A., Marshall, M., and Bartlett, C. 2009. Two-Eyed Seeing and the Language of Healing in Community-Based Research. *Canadian Journal of Native Education*, 32: 3-2. [http://www.integrativescience.ca/uploads/articles/2009Iwama-etal-CJNE-Two-Eyed-Seeing-Mikmaq-language-healing-community-based-research\[1\].pdf](http://www.integrativescience.ca/uploads/articles/2009Iwama-etal-CJNE-Two-Eyed-Seeing-Mikmaq-language-healing-community-based-research[1].pdf)

Marshall, A., Marshall, M., and Iwama, M. 2010. Approaching Mi'kmaq Teachings on the Connectiveness of Humans and Nature. In: S. Bondrup-Nielsen et al. (Eds). 2010. Ecosystem Based Management: Beyond Boundaries. Proc. 6th International Conf. of Science and Mgmt of Protected Areas, 21–26 May 2007, Acadia University, Wolfville, Nova Scotia. Science and Management of Protected Areas Association, Wolfville, NS. <http://www.integrativescience.ca/uploads/articles/2010-Beyond-Boundaries-ecosystem-based-management-Marshall-Iwama-SAMPAA-2007-proceedings.pdf>



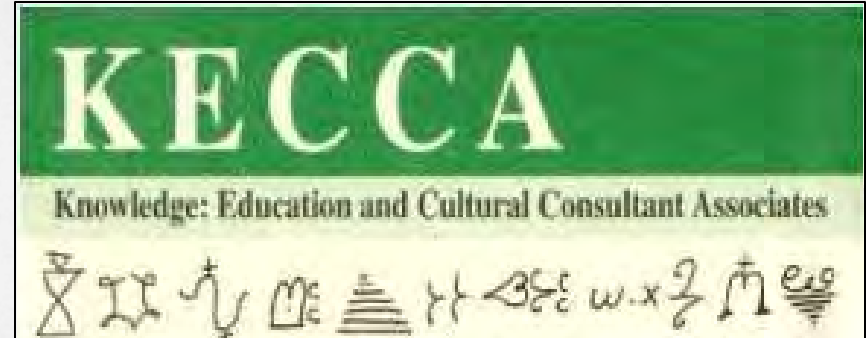
Thank you

KECCA ... Knowledge: Education and Cultural Consultant Associates

KECCA is a Mi'kmaw First Nation's community-based entity that provides consulting services with respect to Mi'kmaw Traditional Knowledge.

Services provided are directed towards:

- ensuring accurate interpretation of Mi'kmaw Traditional Knowledge.
- ensuring correct orthography for written Mi'kmaq.
- ensuring protocols for ethical guidance and review via Unama'ki Council of Elders.
- ensuring timely and appropriate consideration for issues related to intellectual property rights.



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