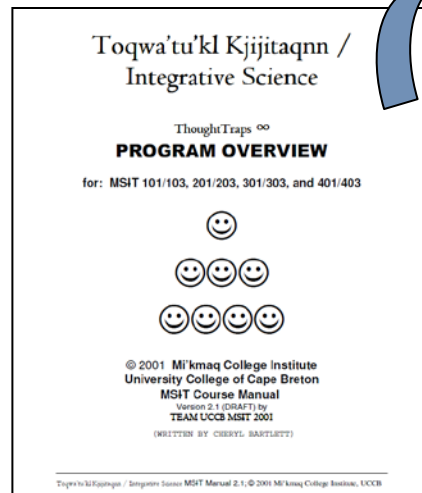


INTEGRATIVE SCIENCE ACADEMIC PROGRAM: A "QUESTIONS" AND "PATTERNS" APPROACH TO LEARNING SCIENCE AND ITS WAYS OF KNOWING



Institute for Integrative Science & Health

www.integrativescience.ca



ThoughtTraps (early drafts only) available as PDFs at:

<http://www.integrativescience.ca/Program/>

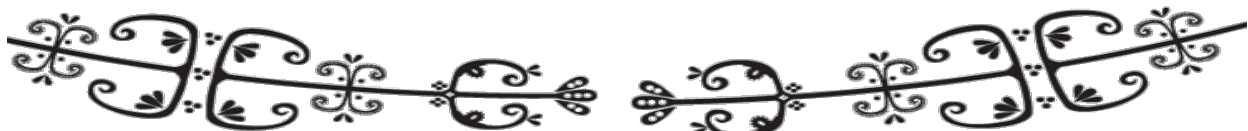
In ThoughtTraps ∞ (Program Overview), which was one of the four teaching manuals created by Cheryl Bartlett in 2000-2001 to help explain the Integrative Science academic program and its MSIT courses, this pedagogical statement is found (p. 9):

Much of the content in the MSIT courses is structured around **questions** and **patterns**.

Question: Why?

Answer: Two reasons ... because:

- 1) **asking questions** is of central importance in the scientific pursuit, whether it is within the Aboriginal or Western world views. It is also at the heart of creative thinking, which plays a critically important role in science and many other human endeavours.
- 2) **recognizing patterns** is something all humans do naturally. So, for Toqwa'tu'kl Kjjitaqnn / Integrative Science we chose to exploit this natural tendency — our human desire for the overall pattern or “big picture” — for the purposes of *learning*.



Explanations and illustrations for the Integrative Science pattern approach to science can be found in these sources:

1) ThoughtTraps ∞ (Program Overview) available as a pdf on the website for the Institute for Integrative Science & Health at: <http://www.integrativescience.ca/Program/>

2) the "dynamic, pattern-based knowledge" section within the theme "Broadened and Culturally-Inclusive View of Science" on the website for the Institute for Integrative Science & Health at: <http://www.integrativescience.ca/Themes/ScienceKnowledge/>

3) the article "Integrative Science and Two-Eyed Seeing: Enriching the Discussion Framework for Healthy Communities" by Bartlett, C., Marshall, M., Marshall, A., and Iwama, M. which is to appear as a chapter in the book "Beyond Intractability: convergence and opportunity at the interface of environmental, health and social issues" edited by Lars K. Hallstrom, Nicholas Guehlstorf, and Margot Parkes (forthcoming), UBC Press. The authors' final draft is available on the website for the Institute for Integrative Science & Health at: [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)

4) various PowerPoint presentations by the Integrative Science research team, all of which are available on the website for the Institute for Integrative Science & Health in the section entitled "Articles and Presentations" at <http://www.integrativescience.ca/Articles/> ... you will need to look for each among the numerous entries listed by year

- a) Bartlett, C. 2010. Integrative Science – Dancing to Learn and Learning to Dance. STAO2010 Conference “Inclusive Science: Difference, Diversity and Equity” organized by the Science Teachers’ Association of Ontario. Toronto, ON, 11-13 November 2010.
- b) Bartlett, C.M. 2008. Science as “dynamic pattern-based knowledge”: including diverse cultures, engaging diverse learners. ACTUA National Planning Conference. Ottawa, ON, 4-6 June 2008.
- c) Bartlett, C.M. 2007. Science: dynamic, pattern-based knowledge stories ... an integrative framework, with emphasis on ‘role of the knower’. Audience: U of T Aboriginal Studies Program, ABS350Y Aboriginal Health Systems; professor: Amanda Ritchie. Delivered as "Distinguished Lecturer", University of Toronto, Toronto, ON, 5 November 2007.
- d) Bartlett, C.M. 2006. Mimesis within a pattern transformation conceptual framework for Integrative Science for the 21st Century. Colloquium on Violence and Religion (CoVR); Mimesis, Creativity, and Reconciliation. Saint Paul University, Ottawa, ON, 31 May - 4 June 2006.

- e) Kavanagh, S. 2006. Patterns in plants; a conceptual framework for Integrative Science. National Conference, Canadian Network for Environmental Education and Communication (EECOM) and Interpretation Canada (IC). White Point Beach, NS, 19-22 October 2006.
- f) Kavanagh, S., Bartlett, C., and Marshall, M. 2006. Imagination in the natural sciences: pattern recognition, transformation, and expression. 4th International Conference on Imagination and Education; Opening Doors to Imagination. Vancouver, BC, 12-15 July 2006. *Published Proceedings at:* <http://www.ierg.net/confs/viewpaper.php?id=141&cf=1>
- g) Bartlett, C.M. 2005. Diverse conceptualizations of nature's patterns: science for the 21st Century. Atlantic Canada Association of Science Educators (ACASE), "Weaving Together the Many Threads of Science Education" – Second Annual Conference and Workshops, session theme: Where are science and science education headed? St. Francis Xavier University, Antigonish, NS, 7-9 July 2005.
- h) Bartlett, C.M. 2004. Aboriginal and Western sciences: pattern consciousness. Association of Science Teachers [Nova Scotia] Conference 2004 "SLIDE into Science, Literacy, Inquiry, Discovery, Educate". Halifax, NS, 22 October 2004.
- i) Bartlett, C.M., with artist B. Kavanagh, undergraduate students D. Bernard and S. Bernard, and research assistants S. Kavanagh, and N. Lefort. 2003. Art Within Science Unfolding. The Creativity Gap: How the Arts Inspire an Innovative Society; Canadian Conference on the Arts National Policy Conference 2003. Sponsored by Canada Council for the Arts. Halifax, NS, 28-29 November 2003.

**for many years we have been on a
Co-Learning Journey to develop a pattern approach
to learning science and its ways of knowing
(we have been our own experimental rats)**

