Emergence and convergence

Opening space for interdisciplinary initiatives in Canadian higher education

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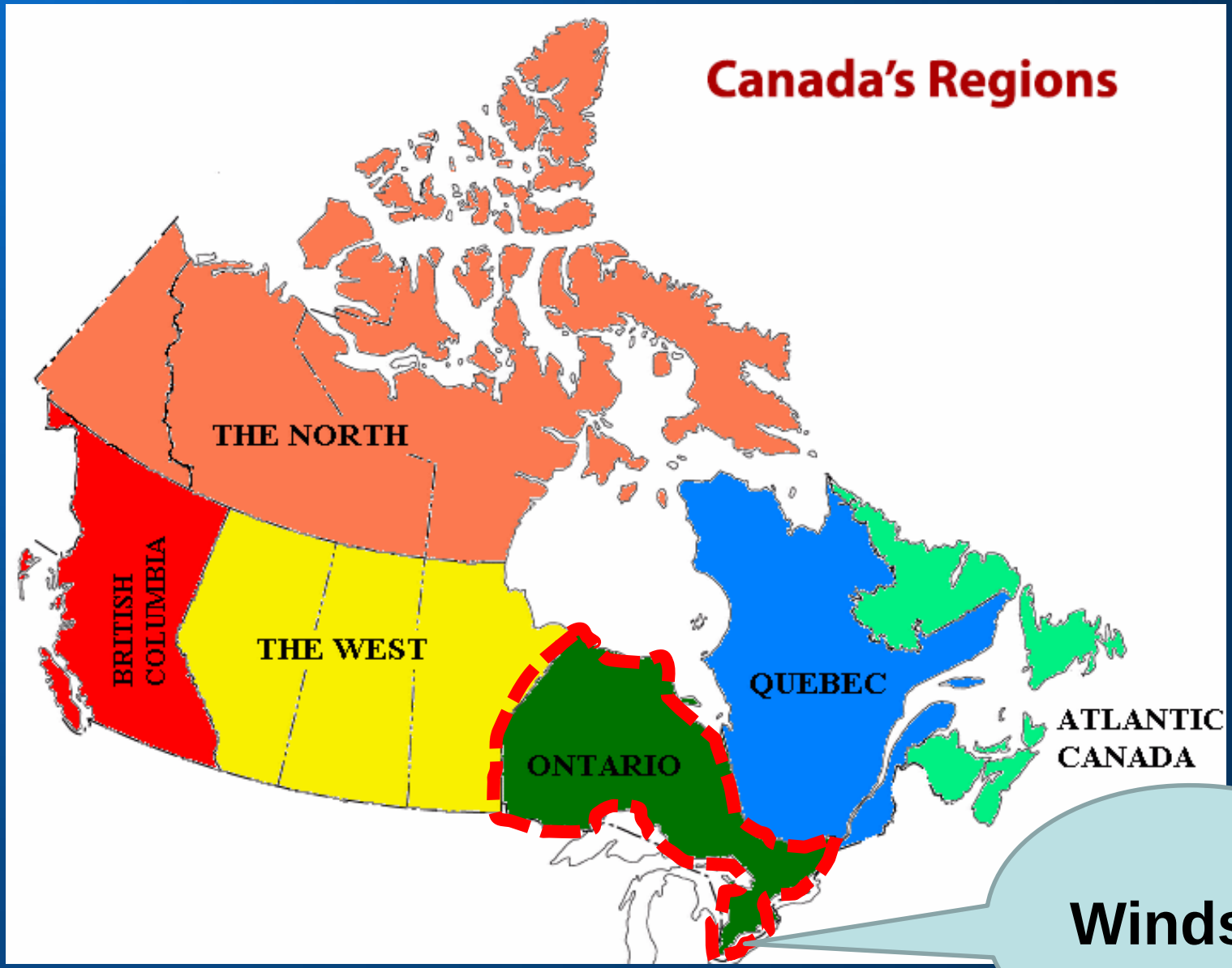
Outline

- Introduction and context: Ontario, Canada
- Interdisciplinarity as we see it
- Potential strengths of interdisciplinarity
- Emerging structures in Windsor and Ontario
- Examples of funded studies and development
- Emergence and convergence
- Back to the future



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UWindsor on the border of Canada & the USA

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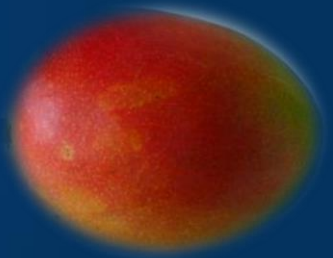
Let me count the ways…

- Multidisciplinarity
- Crossdisciplinarity
- Transdisciplinarity
- Pluridisciplinarity
- Metadisciplinarity
- Interdisciplinarity

“Fruits, Salads, Smoothies”

All three can be delectable and nourishing depending on context, quality, and presentation:

1) A mango on a warm day in Brisbane



2) A fruit plate at a reception on campus

3) A smoothie at home after a run

Nissani, (1995)

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A *popular* working definition & a specific program description

- "An academic program or process seeking to synthesize broad perspectives, knowledge, skills, interconnections, and epistemology in an educational setting." *Wikipedia*
- "An interdisciplinary graduate program integrates knowledge, skills, data, ideas and insights from different domains of knowledge to examine a phenomenon that lies beyond the purview of a single area of knowledge and/or specific discipline(s)." *UVic*

The (W)Right Stuff: A Baker's Dozen

1. Interdisciplinarity often leads to creative approaches to tasks
2. Scholars 'immigrating' to a new field can make important contributions
3. Disciplinarians may commit errors due to 'locked in' practices
4. Topics of interest can fall in the interstices of the traditional disciplines
5. Many problems require an interdisciplinary approach

6. Reminds staff of the unity of knowledge
7. Proponents dare to travel into new lands
8. Can lead to more flexibility in research
9. Can breach gaps in communications between disciplines
10. Means broader access to data and resources
11. Complementary skills are brought to collaborations
12. Growth in personal & professional capacities
13. Academics can respond to external and internal drivers.

Adapted from Nissani (1997) and Fraser (2012)

Institutional response to Ministry initiative: example one

Productivity and Innovation Fund

- Infrastructure for large hybrid courses
  - Lecture capture and student engagement tools
  - Able to facilitate development of shareable content

- Feasibility study on Shared Courses
  - Necessary conditions for successful collaboration

International Analysis of Shared Course Development

"There is considerable value to the development of collaborative institutional cultures in and of itself, and that collaborative capacity will become an increasingly important core competency in the more differentiated and change-oriented university sector."

Wright et al, (2014)

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Shared Course Development

"Shared Course Development has been most successful, and its products most sustainable, in contexts where policy frameworks, infrastructure, and resources facilitate or demand collaboration, institutions share common curricular understandings and quality assurance practices, and there are mechanisms for stakeholder and employer engagement in programme and course development."

Wright et al (2014)

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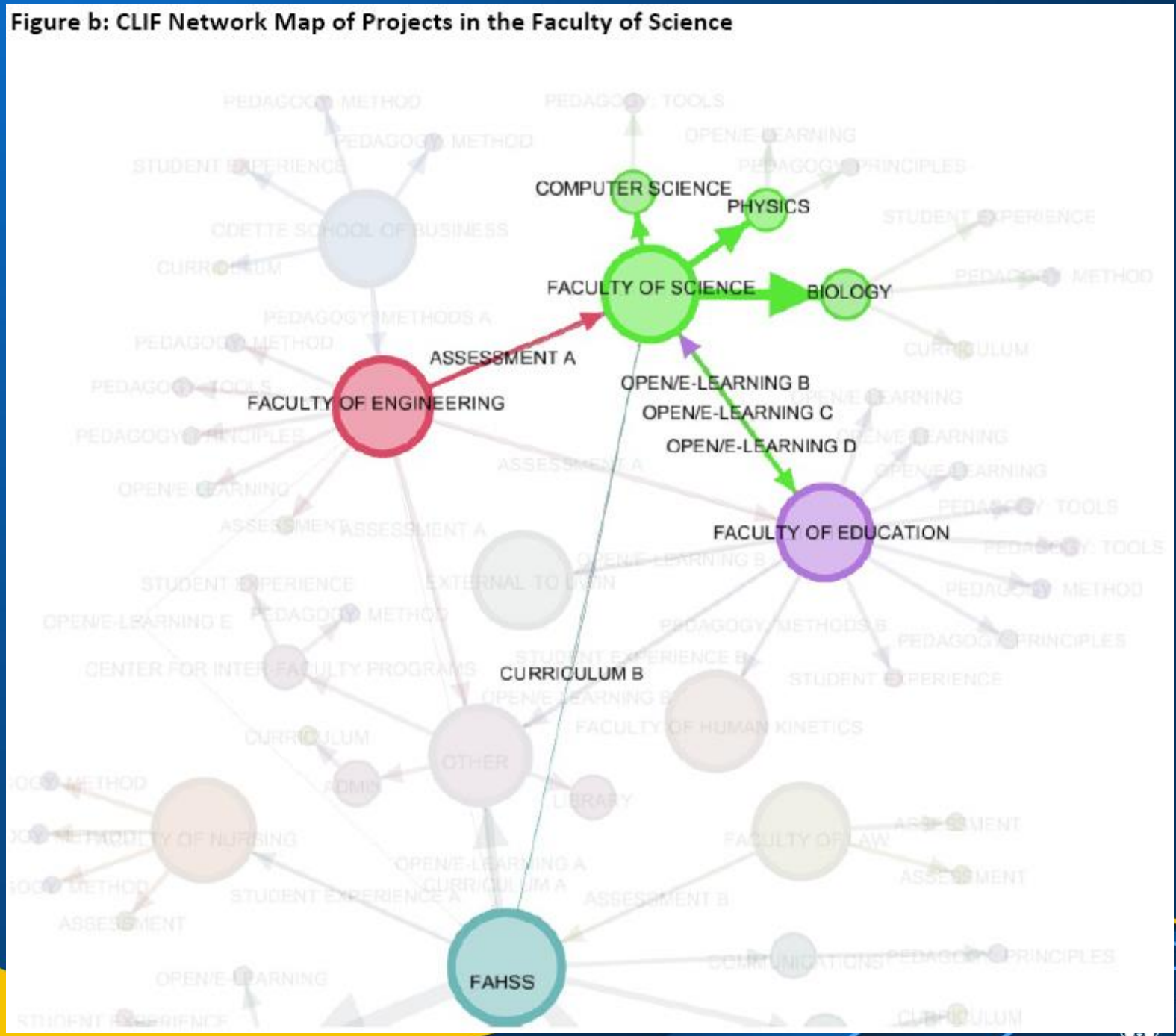
Figure b: CLIF Network Map of Projects in the Faculty of Science



The creation of the Office of Open Learning

- Founded in 2012 through a strategic internal grant
- Responsibility for increasing / mainstreaming online and hybrid learning opportunities
- Supports pedagogical innovation and adoption of emerging technologies
- Facilitates collaboration across disciplines and institutions
- Timing aligned with provincial gov. initiatives

Emergence and Convergence

Intrinsic drivers

- Declining local population and enrollments
- Desire to enhance flexibility for students
- Meeting needs of non-traditional students
- Enhancing learning outcomes
- Creation of OOL

Extrinsic drivers

- Provincial government policy directions
- Improved ‘productivity’ and ‘differentiation’
- Access to education – massification
- Targeted grant funding – required collaboration
- Creation of eCampus Ontario

Ministry eLearning Grants:

Methodologies for Interdisciplinary Collaborative Innovation

- An engineer, a business data guy, and a political scientist propose a project…
  - Unsuccessful in funding application
  - One reviewer didn't 'get' the project or how it could work online, other did;
  - Internal partnership not valued as much as external
- **BUT** going ahead as an internally supported project
    - A *lot* of work
  - Challenging within existing siloed structures
  - Workload sharing, budget model

Ministry eLearning Grants:
Intro to Interdisciplinary Arts and Science

- Intended as an introductory course to help students learn about disciplinarity in an interdisciplinary way
  - Unsuccessful in funding application
  - Reviewers didn't 'get' the project or how it could work online
  - Commented that students would not take an ID course, even if they should

e-learning grants: Forensic Science

- Project shared across UWindsor and Trent U
- Broad forensic science definition - interdisciplinary
  - Chemistry, Biology, Physics, Computer science, Accounting, Law
- Originally in Centre for Interfaculty Studies, now in Science Dean's Office
- Different approaches to Forensics at each institution

Richness Variables Among Disciplines

(Adapted from Nissani, 1995)

Realms	Number	Proximity	Novelty of mix	Degree of integration
Knowledge				
Research				
Education				
Theory				

Richness Variables Among Disciplines Example:

Forensic Science

Realms	Number	Proximity	Novelty of mix	Degree of integration
Knowledge	**High**	**Far**	**High**	**Med-High**
Research	**High**	**Close**	**High**	**Med**
Education	**High**	**Close**	**High**	**High**
Theory	**Med**	**Far**	**Med-High**	**Med**

Back to the Future

- New horizons: sustainable from within?
- Future developments: external and internal?
- Interdisciplinarity in the future
- Taking responsibility for new directions
- The role of academic units, the educational developer, the support services, the integration of priorities (external and internal) as well as factors unknown…

Resources and References

Fraser, C. (2012) Sharing the Load: Interdisciplinary Collaborations for Research, Writing and Student Engagement Opportunities. Presentation. Windsor, Ontario

Nissani, M. (1995) Fruits, Salads, and Smoothies: A Working Definition of Interdisciplinarity. Journal of Educational Thought 29(2) 119-126

Nissani, M. (1997) Ten Cheers for Interdisciplinarity: The Case for Interdisciplinary Knowledge and Research. Social Science Journal 34(2) 201-216

Wright et al (2014) Shared Modular Course Development: A Feasibility Study. A Ministry of Training, Colleges and Universities Productivity and Innovation Fund Initiative. Windsor, Ontario, Canada

Resources and Sample Interdisciplinary Programmes

- How Academic Institutions Can Facilitate Interdisciplinary Research. USA. Web page available at https://www.nap.edu/read/11153/chapter/7
- Interdisciplinary Graduate Program. Web page available at http://web.uvic.ca/calendar2016-09/grad/programs/intd/index.html
- The IMPACT project: An interdisciplinary educational initiative focused on community engagement project. Web page available athttps://mi.mcmaster.ca/portfolio/interdisciplinary-teaching-and-learning/
- The Institute of Health Policy, Management and Evaluation (IHPME). Web page available at http://ihpme.utoronto.ca