

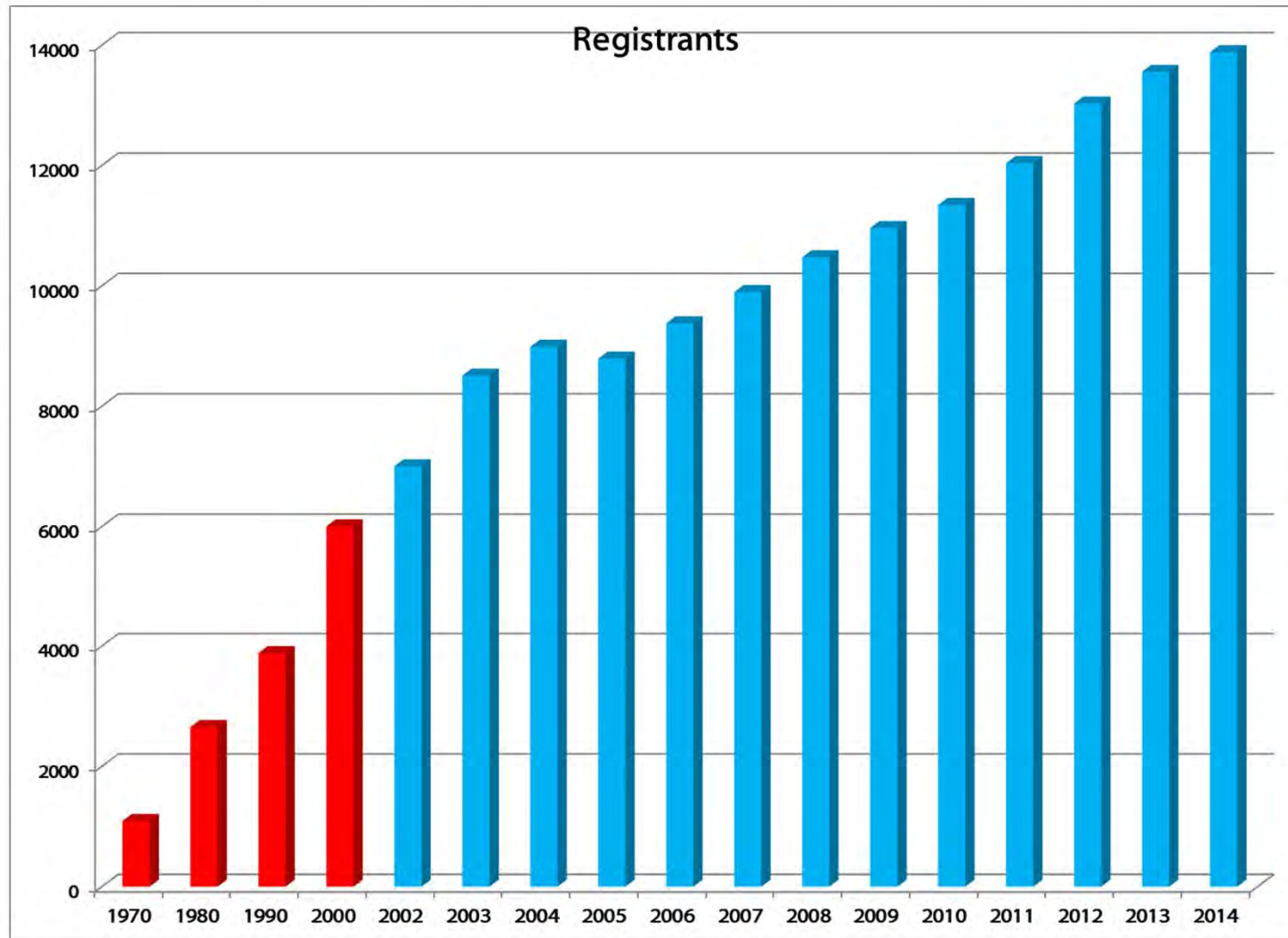


# Geoscientists Canada

CCCESD - Meeting  
Oct 2015

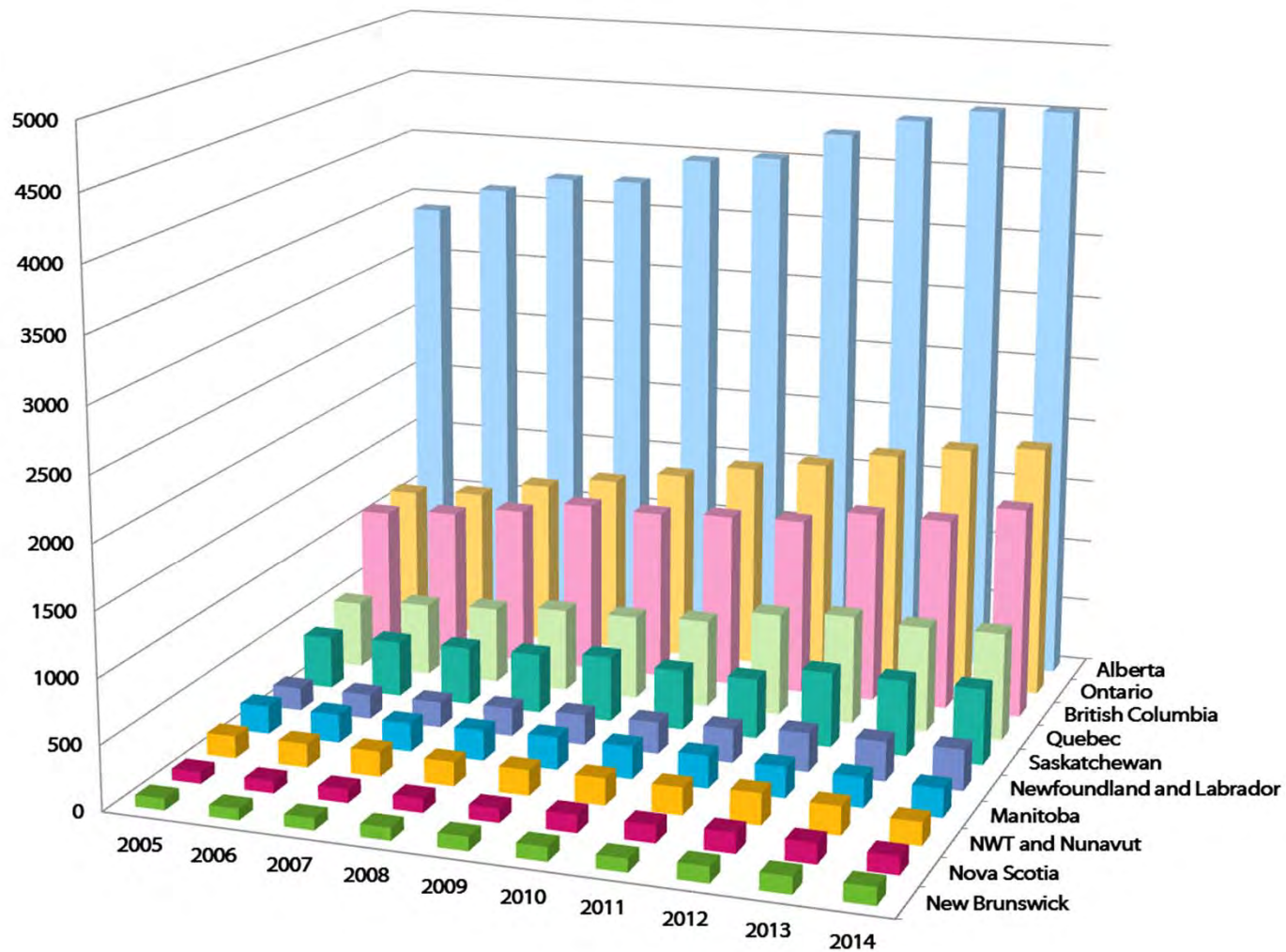
Brent Ward - Vice Chair  
CGSB

# Geoscientist Licensure in Canada

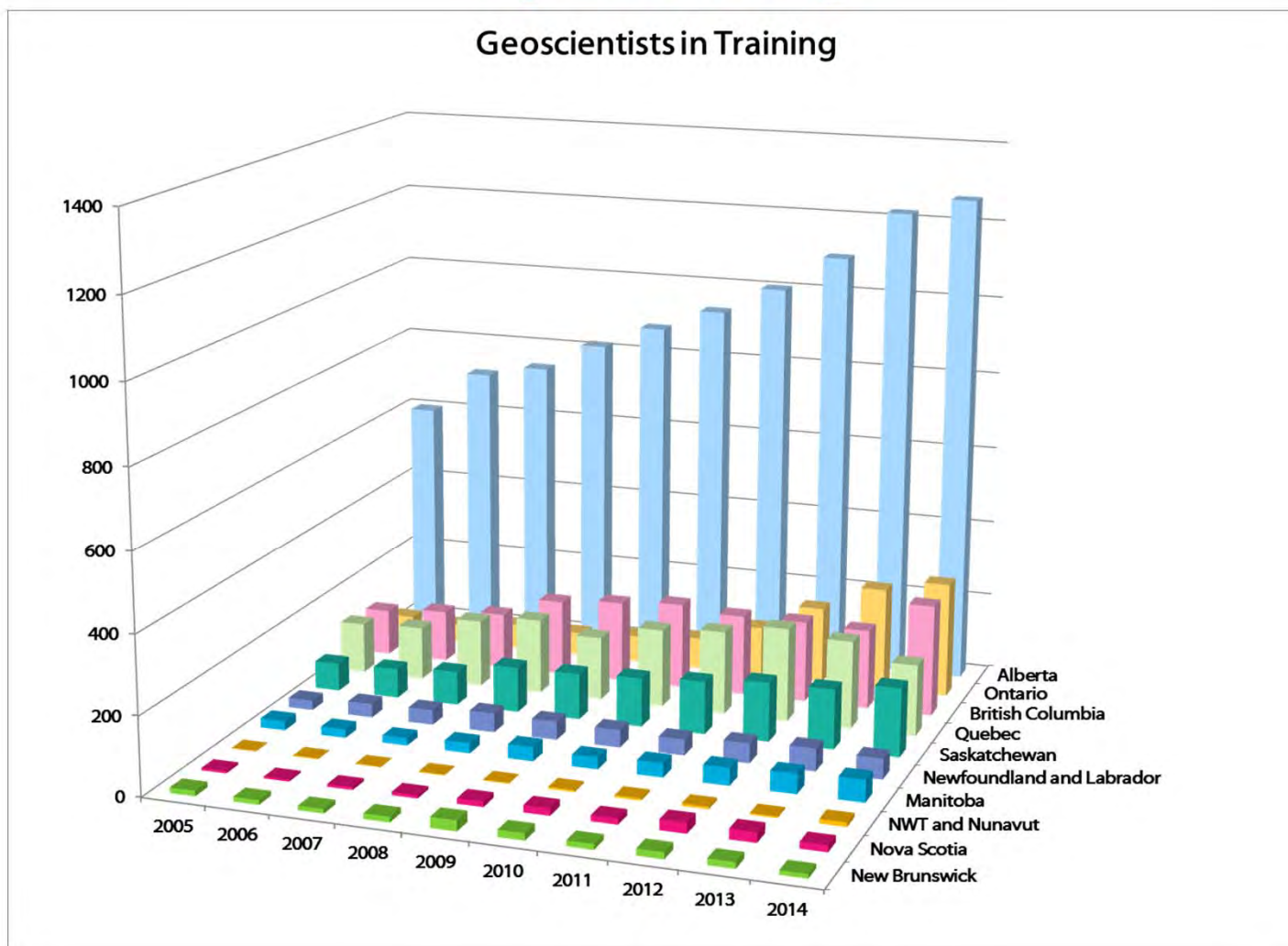


# P.Geo's

## P.Geo: Full Practicing



# Geoscientists in Training ("GITs")





# Constituent Associations



Professional Engineers  
and Geoscientists of BC



The Association of Professional  
Engineers and Geoscientists of Alberta



A P E G S

*Association of Professional Engineers  
& Geoscientists of Saskatchewan*



ASSOCIATION OF PROFESSIONAL GEOSCIENTISTS OF ONTARIO



Northwest Territories and Nunavut  
Association of Professional Engineers and Geoscientists



**GEOSCIENTISTS**  
NOVA SCOTIA



About

Profession of Geoscience

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Practice in Canada

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Natural Resources Canada/Ressources naturelles Canada

## Ensuring Canada is served by a skilled, versatile, reputable and accountable geoscience profession

Geoscientists Canada is the national organization of the 10 provincial and territorial regulatory bodies that govern Canada's professional geoscientists and geoscientists-in-training. Geoscientists Canada co-ordinates development of high national standards of admissions, competency, practice and mobility to ensure that Canada is served by a skilled, versatile, reputable and accountable geoscience profession. [Learn more here](#)

## Our Members

Alberta

British Columbia

Manitoba

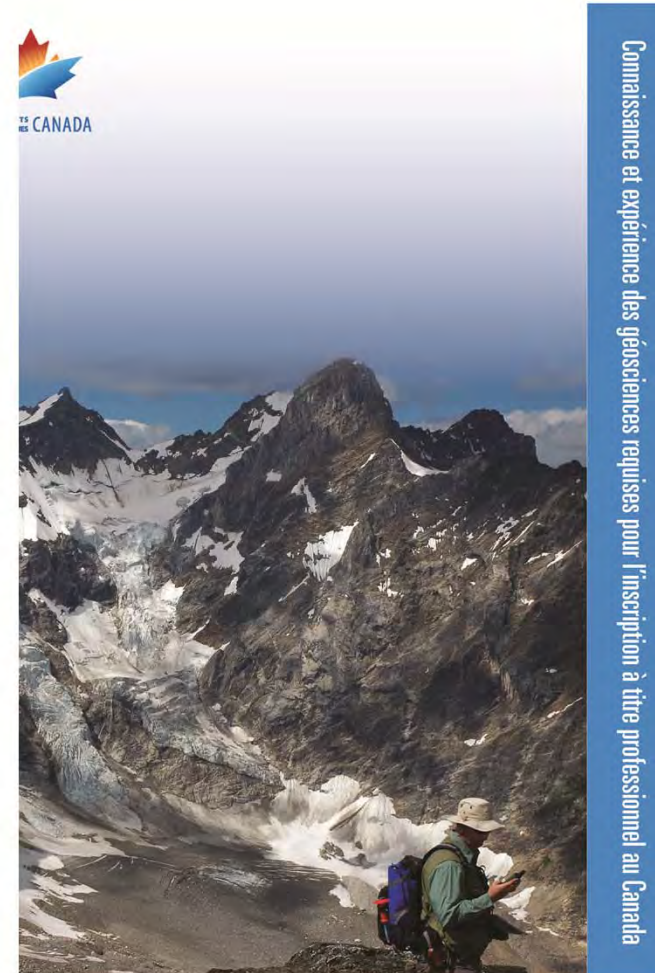
New Brunswick

Newfoundland and Labrador

# Focus Areas – Strategic Alliances





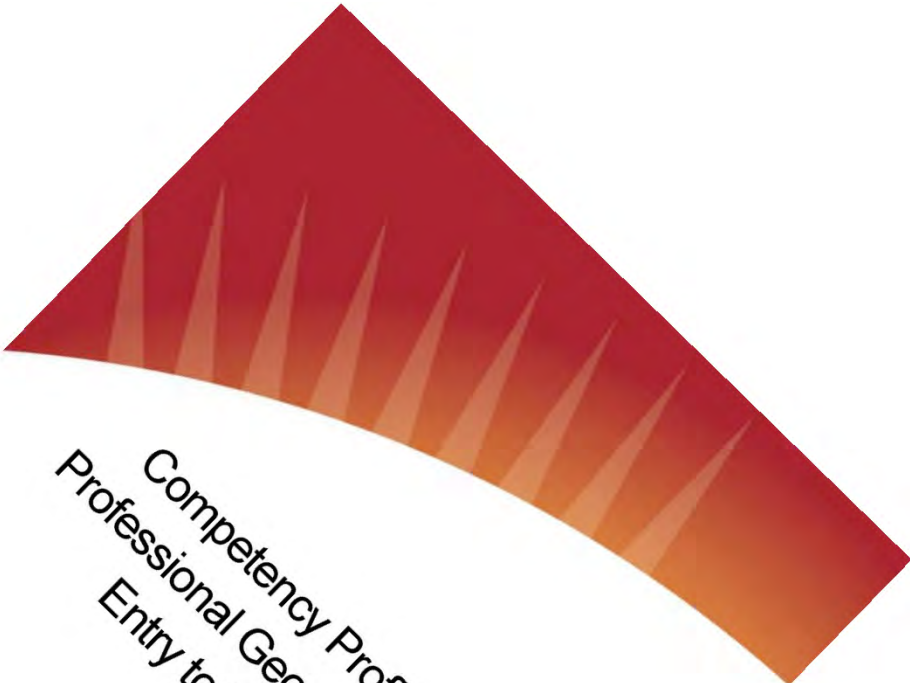


[http://geoscientistscanada.ca/wp-content/uploads/2013/11/GKE-2012-Reprint\\_Web-E.pdf](http://geoscientistscanada.ca/wp-content/uploads/2013/11/GKE-2012-Reprint_Web-E.pdf)





Profil des compétences  
initiales nécessaires  
exercer la  
géologie

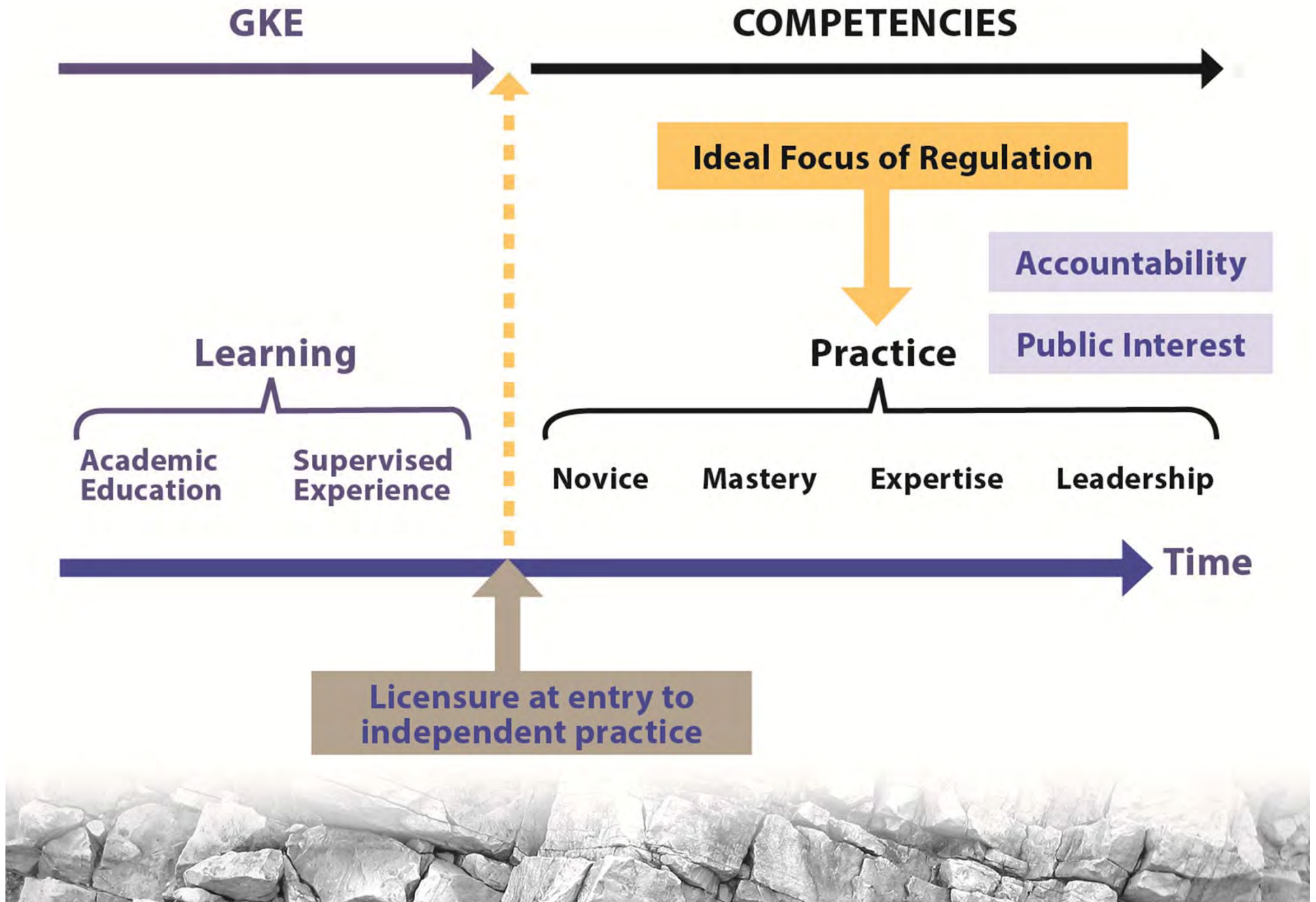


Competency Profile for  
Professional Geoscientists at  
Entry to Practice

June 26, 2014



<http://geoscientistscanada.ca/wp-content/uploads/2015/07/Competency-Profile-for-Professional-Geoscientists-at-Entry-to-Practice-Combined-Doc.pdf>



## Key question for the team

*What are the job tasks that we would expect, as a minimum, all geoscientists to be able to perform at entry to independent practice?*



# Consultation and Validation:

**Development**  
**Apr-Dec 2013**

- Development of proposed competencies by SME team
- Preliminary reviews by CGSB
- Release of first consultation version

**Consultation**  
**Jan-May 2014**

- Consultations with CAs
- Release second consultation version
- Practice Analysis Survey with PGeo's nationally
- Consultations with geoscience community
- Adjustments by SMEs based on feedback

**Finalization**  
**June 2014**

- Special Competency Workshop for CAs
- Review and Acceptance by CGSB
- Final report ; Recommendation to CAs

# Profile consists of 5 sections

1. Generic competencies applicable to all geoscientists

2. Competencies applicable to geoscientists working within the discipline of geology

3. Competencies applicable to geoscientists working within the discipline of environmental geoscience

4. Competencies applicable to geoscientists working within the discipline of geophysics

5. Specialized competencies applicable to all geoscientists but referring to a specific area of practice

"Area of practice" = an established area of practice within a discipline (e.g. survey mapping; mineral exploration; groundwater assessment; oil & gas exploration geophysics)

## Headings within sections

### **All Geos (68)**

Scientific method  
General geoscience  
Communication &  
reporting  
Information technology  
Organization &  
management  
Professionalism  
Professional  
development  
Ethics

### **Discipline (~20)**

Planning  
Acquisition  
Interpretation  
Integration

### **Practice Area (5)**

Dr David Cane  
*Catalysis Consulting*



## GEOSCIENCE COMPETENCY PROFILE

1. Competencies applicable to all geoscientists	
1.1 Scientific method	
1.1.1	Apply scientific methodologies.
1.1.2	Apply concepts and principles of mathematics and statistics.
1.1.3	Apply concepts and principles of physics and chemistry.
1.1.4	Access and search scientific literature.
1.1.5	Recognize uncertainty, ambiguity and limits to knowledge.
1.1.6	Apply principles of quality assurance and quality control (QA / QC).
1.1.7	Undertake reasonable investigation and due diligence.
1.1.8	Use peer review processes.
1.2 General geoscience	
1.2.1	Recognize the essential features, processes, materials, history and development of the Earth and life on the Earth.
1.2.2	Recognize the complexities and interactions of geology and of geological processes in space and time.
1.2.3	Recognize the complexities and limitations of geoscience studies carried out in the field, the laboratory and the office.
1.2.4	Recognize the diversity of working environments within geoscience practice.
1.2.5	Apply locational tools and principles to geoscientific data.

<b>2. Competencies applicable to geoscientists working in the discipline of geology</b>	
<b>2.1 Planning</b>	
2.1.1	Compile and incorporate existing geoscience information.
2.1.2	Design field programs applicable to purpose of investigation and site conditions.
<b>2.2 Acquisition</b>	
2.2.1	Implement mapping programs.
2.2.2	Incorporate geophysical and remote sensing methods.
2.2.3	Implement sampling programs.
2.2.4	Incorporate drilling programs.
2.2.5	Implement logging programs.
2.2.6	Select appropriate laboratory analyses.
2.2.7	Address uncertainties and limitations in data.
<b>2.3 Interpretation</b>	
2.3.1	Determine and interpret rock and sediment sequences, associations and genesis.
2.3.2	Determine and interpret lithological assemblages, provenance, age and spatial relationships.
2.3.3	Determine and interpret surficial landforms, materials and processes.
2.3.4	Determine and interpret structural features and relationships.
2.3.5	Evaluate data consistent with purpose of investigation.
2.3.6	Evaluate data to construct models.
<b>2.4 Integration</b>	
2.4.1	Formulate conclusions and recommendations.

5. Competencies applicable to the geoscientist's area of practice	
5.1	Apply a comprehensive and systematic understanding of current knowledge to practice activities.
5.2	Apply a comprehensive knowledge of current methods used to undertake investigation.
5.3	Critically evaluate models.
5.4	Seek and apply knowledge to address multifaceted problems in familiar and unfamiliar contexts.
5.5	Recognize the complexity of knowledge, as well as contributions from other geoscience areas of practice and other professions.





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## news release

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FOR IMMEDIATE RELEASE

### Federal, Provincial and Territorial Governments take action to connect Canadians with jobs

Charlottetown, July 11, 2014 – Labour Market Ministers from across the country met today to take action to ensure Canadians have the skills they need to compete in a global economy. The Forum of Labour Market Ministers (FLMM) is co-chaired by the Honourable Jason Kenney, federal Minister of Employment and Social Development and Minister for Multiculturalism, and the Honourable Allen Roach, Prince Edward Island Minister of Innovation and Advanced Learning.

*"Our government's top priorities are creating jobs, economic prosperity. I'm very pleased that since labour market ministers significant progress on the creation of the Canada Job Grant put more skin in the game, the Canada Job Grant will result guaranteed jobs. In the year ahead, we look forward to build working together to improve foreign credential recognition, information, increase labour mobility and strengthen apprenticeship well as the Labour Market Development Agreements."*  
—The Honourable Jason Kenney, Minister of Employment and Social Development and co-chair of the FLMM

*"Provinces and territories across Canada share critically important employment programs and skills training. We value this opportunity to discuss key areas of importance and our challenges. We look forward to collaboration to ensure we have the best apprenticeship, skills services that Canadians need."*  
—The Honourable Allen Roach, Prince Edward Island Minister of Innovation and Advanced Learning, and co-chair of the FLMM

improvements as necessary. Ministers created a Working Group to develop the Terms of Reference for the evaluation of the Canada Job Grant.

### Foreign Qualification Recognition

Ministers recognized the importance of integrating newcomers into the labour market.

Today, Ministers announced the addition of 10 new target occupations to the Pan-Canadian Framework for the Assessment and Recognition of Foreign Qualifications<sup>3</sup>.

The Framework helps improve foreign qualification assessment and recognition for internationally trained professionals, so they can put their knowledge and skills to work

### The following are the new set of target occupations in the Framework:

#### 2014-15

- audiologists and speech language pathologists
- midwives
- geoscientists
- psychologists
- lawyers
- carpenters
- welders
- electricians (industrial and construction)
- heavy duty equipment technicians
- heavy equipment operators

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<sup>1</sup>While the Quebec government has not endorsed the Framework, it supports its principles and agrees to share reports already made public to its citizens, notably those tabled at the National Assembly.



## **A Pan-Canadian Framework for the Assessment & Recognition of Foreign Qualifications**

Presentation by the Foreign Qualification Recognition Working Group to  
Geoscientists Canada, June 11<sup>th</sup>, 2014

The Framework is available through the ESDC site:

<http://www.esdc.gc.ca/eng/employment/foreign-qualification/assessment-recognition/assessment-recognition-framework/assessment-recognition-framework.aspx>



## **cadre d'évaluation et de reconnaissance des qualifications professionnelles à l'étranger**

Présentation du Groupe de travail sur la reconnaissance des qualifications  
professionnelles acquises à l'étranger à Géoscientifiques Canada  
Le 11 juin 2014

Le Cadre est présenté sur le site Emploi et Développement Social Canada :

<http://www.esdc.gc.ca/eng/employment/foreign-qualification/assessment-recognition/assessment-recognition-framework/assessment-recognition-framework.aspx>



ESDC - FCRP Funding - Proposal Concept  
28 April 2015

**Admissions Support Tools ("AST") Project Phase II – Competencies in Action**

Geoscientists Canada/Géoscientifiques Canada is the organization of the regulatory bodies that govern geoscience practice in eleven provinces and territories; its mandate is to support its member regulatory bodies – its constituent associations (CA

Geoscientists Canada intends to submit a proposal to ESDC Program (FCRP). In July 2014, it was announced by the Forum of Geoscientists Canada that it had been added to the list of targeted professions that are part of the Recognition of Foreign Qualifications (FQR)

The planned work will further assist the CAs with admission of Canadian-trained geoscientists applying for licensure to practice geoscience. Funding anticipated is on the order of \$560,000 - for work on

- Component 1 Rebuild the *Geoscience Knowledge Registration in Canada document* (GKE) in terms of
- Component 2 To identify competency-based tools
- Component 3 To develop an on-line self-assessment

The project will take 24 months to complete. In-kind support from volunteers, and by volunteers and staff attached to the CAs; contribution over the full 2 years duration is on the order of

Geoscience is an applied science occupation which by its nature involves international collaboration. The economic sectors in which geoscience is involved include discovery and development, mineral exploration and mining, geotechnical consultancy work, and third level education and research, all of which involve the movement of expert personnel both in to and out of Canada; geoscience is a key sector of Canada's overall economy; and Canada holds prominence

Geoscientists trained outside of Canada frequently have need for migration to Canada; or to fulfill shorter term international assignments in Canada set for them by an employer or client who operates globally and need credentials that are readily recognized

<sup>1</sup> <http://geoscientistscanada.ca/wp-content/uploads/2013/11/>



FLMM – FQR - ACTION PLAN – **GEOSCIENCE – Working Draft**  
Thursday, May 21, 2015

Potential Priorities for Action	Relevant Players	Timelines	Potential Objectives
<b>FQR PATHWAY: Assessment &amp; Recognition</b>			
Re-characterizing the GKE in terms of competencies	<b>Lead:</b> Geoscientists Canada  <b>Potential Players:</b> Regulators  <b>Potential Funder:</b> ESDC	Sept 2017	<p>The GKE (Geoscience Knowledge and Experience Requirements for Professional Registration in Canada) booklet - the profession's current published national standard for admissions reflects a learning process; it is not competency-based. The profession recently agreed upon a full spectrum competency profile for the practice of geoscience. It is critical the GKE now be re-characterised in terms of the competencies necessary to practice the profession</p> <p>Re-describing the GKE in terms of competency based - academic outcomes (competency indicators) will facilitate consideration of degrees obtained in other countries, where delivery may be more modular than courses-based - such as the United Kingdom or other parts of Europe. It will also ensure Canada's entry-to-practice requirements can be assessed through a wider variety of means.</p> <p>It will also differentiate between competencies that can be expected as outcomes from university training, and competencies which are best obtained in a practice setting and must be assessed for using different indicators and different testing methods.</p> <p>The main outcome will be a revised competency-based GKE standard for the profession. The GKE booklet has many uses. As the professional primary collective national source of information on admissions requirements (bearing in mind that specific admissions requirements to the profession, while largely based on the on the GKE, are set provincially/territorially), the GKE is equally important to those trained abroad, as it is for those trained (or training) in Canada.</p>



Professionalism in Geoscience | Task Group on Global Geoscience Professionalism - Windows Internet Explorer

http://tg-ggp.org/professionalism-in-geoscience/

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Task Group on Global Geoscience Professionalism IUGS Earth Science for the Global Community

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Purpose and Objectives  
Collaborating Organizations  
Professional Geoscience - Member Organizations  
Sponsors  
Committee  
Terms of Reference



## Professionalism in Geoscience

Geoscientists in all areas of the **geoscience profession** are called upon to provide **expert services and opinions**. These services and opinions are relied upon by employers and the public to make key decisions; decisions which affect business, **the general public good, and the environment**. It is essential that those geoscientists providing the services and opinions are providing them at a professional level; incorporating:

- Sound geoscience knowledge and application of theory;
- Exceptional **ethics**; and
- good judgement; providing services and opinions only in the areas of geoscience in which they are competent.

Regulated professional geoscientists today are held accountable through legislated Codes of Ethics and Complaints and Discipline processes. Other learned geoscience organizations also often have a Code of Ethics and a discipline process, although not legislated. Whether regulated or not, the opinions and services of today's geoscientists greatly affect the public and the environment, and therefore all geoscientists strive to achieve a high level of professionalism.

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http://tg-ggp.org/about-us/collaborating-organizations/

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# 35<sup>TH</sup> INTERNATIONAL GEOLOGICAL CONGRESS

27 AUGUST - 4 SEPTEMBER 2016 | CAPE TOWN, SOUTH AFRICA

[Home](#) > [Themes](#) > Global Geoscience Professionalism and Geoethics

## GLOBAL GEOSCIENCE PROFESSIONALISM AND GEOETHICS

[View all Themes](#)



### Theme Champions



**Ruth Allington**  
GWP Consultants

E-MAIL RUTH



**Oliver Bonham**  
Geoscientists Canada

E-MAIL OLIVER



**Andy Clay**  
Venmyn Deloitte

E-MAIL ANDY

*The appointment of theme champions may not be complete and names will continue to be added as invitees are confirmed.*

DETAILS FOR THE SUBMISSION OF SYMPOSIA CAN BE FOUND ON  
THE WEBSITE AT [www.35igc.org/Scientific Programme](http://www.35igc.org/Scientific_Programme)

31<sup>ST</sup> MAY 2015

Deadline for submission of symposium proposals

## Global Geoscience Professionalism and Geoethics

There is an increasing demand on the accountability of geoscientists working in the public domain in respect of matters dealing with geohazards, public safety, construction compliance, and reporting of natural resource estimates. This has given rise to the promulgation of statutes, codes of practise and ethical guidelines, similar to those of many other professions. An update on the global development





[geoscientistscanada.ca](http://geoscientistscanada.ca)





# Professional Reliance – Public Reporting and the Role of the Geoscientist

- Professional Reliance Model - use becoming commonplace
  - NI 43-101 (minerals); NI 51-101 (oil&gas), Records of Site Condition, Slope Stability Assessments, etc.
- Poor general awareness within the geoscience and engineering community
- Lack of understanding of personal and professional risks
- Lack of compliance and “common knowledge” gap cause for concern
- Securities Commissions (BCSC, OSC, AMF) request to CIM
- CIM approached Geoscientists Canada
  - *Undergraduate Educational Module idea*

# Professional Reliance - Undergraduate Educational Module

- Extracurricular short-course format
  - Two day equivalent
  - Variable formats
  - Lectures set and labs
  - Scenario and role playing labs
- Target audience - all ES students (regardless of ES career interests)
- Target instructors - local P.Geo's and Securities Regulators
- Geoscientists Canada develops/refreshes the material
- Provincial Associations facilitate instructors and offerings