

Realigning the Canadian Geoscience Academy in Response to 21st Century Challenges

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Summary

Given the paramount role of the energy and mineral resource industries as drivers of the Canadian economy, the need to maintain and grow a skilled workforce of creative explorationists is critical for maintenance and growth of national prosperity. Historically, Canada has held a unique place amongst nations in its ability to nurture, train and employ preternaturally talented geoscientists whose combination of keen observational and entrepreneurial skills have been responsible for establishing Canada as a global leader in resource exploration and extraction. Today, that leadership position is threatened by looming workforce shortages, growing international competition, and a fundamental shift in the traditional relationship between industry and the academic institutions that are responsible for educating the next cohort of explorers. The public good is best served by realigning pedagogical and research themes in the Canadian geoscience academy in a manner that emphasizes science-based resource exploration while retaining the vital distinction between formal education and on-the-job training.

The resource industries have proven capabilities to provide new hires with stimulating projects that incorporate practical training in technical applications and management skills. Although it is advantageous for students to gain a modest familiarity with some of these techniques before entering the workforce, it does not serve industrial employers to hire recruits who have learned these skills at the expense of a solid grounding in foundational science. The learning of geoscience, however, is vastly enriched by curricula that emphasize practical application of theory and field-based observational skills across the full breadth of geology and geophysics. The involvement of students in basic and applied research that addresses resource geoscience problems reinforces structured classroom learning, bringing insights through high-level integration of concepts. Creating and maintaining degree programs that accomplish these goals, while also assuring that graduates have fulfilled all of the course requirements for professional registration, are difficult undertakings that require dedicated champions and systemic support throughout the full span of university administration.