

## Ethics in geoscience: our integrity is at stake

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Ethics in geology is one of the most important aspects of geoscience today. It lies directly at the convergence of Earth sciences and society. In 2013, we distributed an online survey to a variety of geoscience-related organizations across Canada. Our intent was to: (1) determine the current state and understanding of geoethical considerations across the geoscience community; and (2) determine whether there was a need to more formally incorporate geoethics education into our undergraduate programs. Over 120 respondents with different levels of training, fields of expertise, and experience contributed anonymous responses to questions related to the following aspects of potential geoethical considerations: (i) scientific integrity; (ii) social responsibility; (iii) aboriginal issues; (iv) corporate ethics; and (v) fieldwork. The majority of respondents agreed that most categories identified were important considerations. A second section on the survey asked respondents to identify from a list given, suspect behaviours they had observed in the working geoscience environment. Over 60% of respondents indicated they had observed biased representation of information and failure to give credit to the author or originator of an idea; over 40% of respondents also indicated they had observed abuse of power by a supervisor, degradation of persons for reasons of gender, minority/race, or sexual orientation, potential conflict of interest, and private land access without permission.

A third section sought to determine how and where geoscientists learned about geoethics, and whether they believed their undergraduate education prepared them to make the ethical decisions they faced in their workplace. Discussions with peers and independent reading were the dominant means for learning about geoethical considerations, and less than 35% of respondents indicated that their undergraduate program prepared them for ethical decision-making in geoscience. These findings collectively speak to an urgent need to address geoethical issues in our undergraduate programs. We are currently in the process of developing materials for wider distribution and welcome ideas and suggestions as we develop these geoethical principles materials.