Introduction
Recent labour studies indicate that demand for engineering and geoscience professionals in Canada will increase over the next decade. Combined with aging demographics, we may soon face significant shortages in many disciplines, particularly in western Canada. In the face of a looming skill shortage companies need to be active in recruiting and retaining a skilled and diverse workforce.

Compared to other professions, engineering has been much less successful in attracting participation from the largest pool of available talent on university campuses today, namely women, representing over 55% of enrolled degree students. In 2010, women accounted for only 10.5% of Canada’s registered professional engineers, and less than 18% of enrolled students. Furthermore, recent studies identified workplace culture as a significant barrier to the retention and advancement of women (N Fouad and R Singh, “Stemming the Tide: Why Women Leave Engineering,” 2011) and perceived discrimination as a serious workplace concern (Prism Economics, “2010 Survey of Workplace Conditions for Engineers,” 2010).

In response to these issues, Engineers Canada (the national organization of the 12 provincial and territorial associations that regulate the profession of engineering in Canada) has adopted and disseminated recommendations to help promote the inclusion of women at all organizational levels. Despite these and other initiatives, the overall statistics for the participation and career trajectories of women in engineering remain low. While the presence of inclusive policies are a necessary first step, a closer look at the practices within engineering firms may suggest that there are inconsistencies between policies, the practices and the workplace climate. Simply stated, to access the benefits of diversity, organizations must embrace diversity as part of their culture. This article reviews the benefits of establishing a diversity culture in the workplace, and discusses steps organizations can take to advance diversity.

Benefits of Diversity
Over the past decade, organizational management studies have demonstrated numerous benefits to diversity1. Recent studies have shown that diverse groups generate more ideas and creative solutions than homogenous groups, increasing potential for innovation. Team members from different demographic and cultural backgrounds bring different life experiences, perspectives and values allowing teams to brainstorm a wider range of solutions and to better understand client needs. This enhanced perspective and increased capacity for innovation gives an organization an advantage in identifying new markets and opportunities.

Organizations that increase diversity in their leadership teams benefit from stronger financial performance. A 2011 Catalyst study of US Fortune 500 companies showed that, on average, companies with a sustained high representation of female board directors outperformed those with sustained low representation by 84% in return on sales and 60% on return on invested capital. A similar Conference Board of Canada study concluded that corporations with at least two women on their board for six years had greater revenue and profits than those with all male boards.

1. Catalyst (www.catalyst.org/) provides a wealth of literature on the benefit of diversity to organizations in all sectors of the economy.
Finally, improving the workplace climate increases employee retention and leads to increased productivity. Policies and practices that create welcoming and inclusive workplaces for women create a better environment for everyone.

**Steps to Building Diversity in an Organization**

To reap the benefits of diversity, often organizations focus solely on recruitment from various demographic groups, hoping that the benefits of diversity will naturally follow. In practice, building a diversity culture, similar to a safety or sustainability culture, requires significant, proactive and sustained effort by the entire organization. Support at all levels, including senior “diversity champions,” highly respected in the company and familiar with (or willing to invest in learning) diversity best practices, is essential to this process.

**Step 1: Reflect.** To benefit from diversity, organization leaders and members must first understand why diversity is valuable to their organization and how they will utilize increased diversity in their everyday business practices; specifically, how diversity will be part of their workplace culture. Companies that seek diversity need to engage in a series of explicit conversations about “why” and “how” to develop a vision for diversity in their company.

**Step 2: Take Stock.** An organizational “diversity scan” sets the stage for moving forward. For example, a diversity audit tool that measures practices and initiatives within an organization, across a spectrum of management levels can help an organization identify and evaluate their policies, and ensure that they allow for work-life balance, flexibility, professional development and leave (such as parental leave) for both men and women. Other measurements important to consider include leadership buy-in, recruitment and advancement practices, compensation schemes, workplace civility, worker engagement, satisfaction and self-efficacy.

Tools such as the Harvard Implicit Bias Test help individuals, particularly decision makers, identify subconscious biases, that by their very nature, intrinsically affect every person’s decision-making process. Unrecognized and unchallenged, these unconscious biases can create systemic barriers to diversity groups.

Measuring once is not sufficient—diversity will not happen overnight; to keep moving forward, companies need to include diversity measures as part of their corporate reporting statistics.

**Step 3: Practice.** While policies are necessary and important, policies without practice can detract from diversity efforts. Cultures can arise where employees feel unable to utilize policies because of fears that superiors or co-workers would view them negatively for doing so, or that they would be penalized during reviews or opportunities for promotion. Leaders must actively promote and model the value of policies that support an inclusive, supportive and healthy environment, and work-life balance.

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In their study of 3,700 female engineers, Fouad and Singh found that one third of those who had left the profession cited negative workplace climate as a significant factor in choosing to leave. On the other hand, the support of co-workers and superiors, investment in training and development, opportunities for advancement, and valuing of their contributions were cited as important practices that strengthened female engineers’ decisions to stay with their organization.

**Practice Case Study: Becoming Leaders**

As an example of a supportive professional development intervention, in 2011, the NSERC Chair for Women in Science and Engineering, BC and Yukon (WWEST) sponsored six introductory Leadership Development workshops developed by the Canadian Centre for Women in Science, Engineering, Trades and Technology (WinSETT) hosted at engineering and geoscience workplaces across BC. These *Becoming Leaders* workshops discussed gender schema, challenges and strengths the participants have found, leadership and values. Participants also shared their experiences and received support in a safe environment.

Before and after these workshops, WWEST administered short surveys on career self-efficacy. Self-efficacy is defined as one’s own belief in one’s ability to succeed in a specific domain and has been shown to be a strong predictor of career persistence. Pre/post test results showed a statistically significant positive increase on five of six self-efficacy indicators. The remaining indicator had a non-significant, but positive increase. The vast majority of participant comments indicated that this intervention had helped them to identify important strategies to increase their career success.

**Conclusions**

There is considerable benefit to businesses, the professions, and Canada in increasing the participation of women in engineering and geoscience careers. To reap the benefits available, organizations must invest in understanding why and how diversity will be integrated into their workplace and then evaluate where they stand in terms of diversity metrics. Finally, a diversity culture that supports and values the contributions of all workers is essential to success.

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Jennifer Pelletier is the manager of the WWEST program. The authors will be presenting a stream on “Diversity in Organizations” at APEGBC’s Annual Conference and AGM in Victoria, BC.