Foreword

In June 2008 a report was published by Harvard University Press that turned heads. The Athena Factor: Reversing the Brain Drain in Science, Engineering and Technology (Hewlett et al. 2008) analyzed the career trajectories of women in the science, engineering and technology (SET) labor force in selected private sector companies around the world. The report documents the unequivocal seriousness of the gender imbalance in the SET fields. The findings of this report claim that women hit an apparent 'breaking point' in their mid to late 30s, which has resulted in 52 percent of highly qualified SET women quitting their jobs. Similar reports have emanated recently from other sources. This 'breaking point' is but one indication of the challenges confronting those who are seeking a greater gender balance in the scientific and technological work force.

The issue of female under representation in the SET disciplines has implications at both the individual and the societal levels. At the individual level it is an issue of fairness in the pursuit of a career; at the societal level it is an issue of economic opportunity. The fairness issue is about the inherent right of an individual in a free society – regardless of gender, race, nationality or other characteristics – to participate in a profession for which one has the interest and the capability. That is, women and men should have equal opportunity to participate in the SET disciplines. The economic opportunity issue is about innovation and competitiveness in the new economy. That is, a country, community or company cannot afford to limit occupational participation on the basis of gender stereotypes. To do so would be to lose the potential contribution of half of the population. Talent knows no gender.

In order to reduce this gender imbalance there is a dire need to produce knowledge about what we know and what works – and to share this knowledge. There is a need for research to understand and frame 'the problem' of gender under representation in science, engineering and technology. Equally important, is a need for publicizing exemplars of interventions that can address these problems. These interventions need to occur in the classroom, the workplace and society. Finally, there is a need for public policy and industry level support for interventions. It is for these reasons that we need the sort of dialogue that occurs in this book. The chapters flow in accordance with a pipeline metaphor that is often used to characterize the range of challenges involved in redressing the gender imbalance. The book starts with an examination of gender policy issues in two representative countries: Australia and the United States. It then moves to the beginning of the pipeline by considering issues and interventions associated with recruiting secondary school females into science and technology fields. It continues with an examination of the situation for university women in SET. The book concludes with chapters about women currently working in scientific and technological jobs. Throughout the book, the scholarly is balanced with the applied through the mechanism of 'career spotlights' that consider practical interventions that contribute to successful career progression of female students and graduates.

There is a varied audience for the messages contained in this book. It includes those from the academy, the workplace, the research community and society at large. University administrators who

are concerned about the recruitment and retention of women preparing for careers in the science and technology professions, and faculty from these disciplines who must address the gender imbalance in the classroom want an understanding of interventions that might increase female participation in SET courses of study. Another audience for this book consists of practitioners and managers who seek practical ways to affect the retention of women in the workplace. Fellow researchers who want to remain current on gender research in the SET fields make up a third audience. Given the range of academic disciplines from which this research emanates and its global representation, it is difficult to keep up with all of the journals publishing gender and SET research. Hence, books such as this are a handy way to maintain an overview of current work. Finally, those who want equal opportunity for their daughters, sisters and spouses, and policy makers who desire both equal opportunity and economic opportunity in SET will benefit from learning more about the issues and efforts to address them.

If we are serious about increasing the participation of women in science, engineering and technology professions, then all of the stakeholders – citizens, scholars, educators, managers and policy makers – need to be part of the solution. But in order to be effective, we need to share knowledge about how to understand the challenges and best practices for addressing them. This is the contribution of this book.

REFERENCES

Hewlett, S.A., Luce, C.B., Servon, L.J., Sherbin, L., Shiller, P., Sosnovich, E., and & Sumberg, K. (2008). *The Athena Factor: Reversing the Brain Drain in Science, Engineering, and Technology.* Boston, MA: Harvard Business Review Research Report 10094.

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