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## Becoming Leaders: A Refreshing Look at Women in STEM

LESLEY MCKARNEY

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"... developing a flexible career plan is an essential tactic for women to employ, in order to meet their personal and professional goals simultaneously"

*"If only I had known then what I know now ..."*

Sounds familiar, doesn't it?

Whether it is with the benefit of hindsight or not, many women recognise that a career generally extends beyond the actual job by inserting itself into relationships with partners and families. The pressures of career development often conflict with commitments at home or with other personal goals, and many women struggle to achieve a satisfactory and sustainable balance between their commitments to work and to life. This is perhaps most evident in science, technology, engineering, and mathematics (STEM) where, despite increasing enrolment numbers and proactive faculty recruitment campaigns, the participation of women in the STEM workforce remains far below that of men. In addition, average salaries for women in these fields continue to be lower than those of men.

But a career in STEM doesn't have to be about personal costs, according to a new book published by the Natural Science and Engineering Research Council (NSERC)/Petro-Canada Chair for Women in Science and Engineering, and Women in Science and Engineering (WISE) in Newfoundland and Labrador. *Becoming Leaders: A Handbook for Women in Science, Engineering and Technology* approaches the challenges faced by women in STEM in a frank and informative manner.

As the authors, Mary Williams and Carolyn Emerson, note in the introduction, this is not 'just another book about women's issues'. Nor is it about male bashing or stereotype quashing. Instead, the handbook was "written to both support career success and to encourage leadership self-awareness" amongst women. The authors try to present evidence and strategies that they hope will help professionals and managers "recognise subconscious biases" and how these biases affect career success. At the same time, women reading this book might better

understand obstacles that surface in their working lives and so find more effective ways to deal with them.

The underlying message in the guide is that it is possible to have a dual-career relationship and a family and still achieve a highly satisfying career, but not without effort, a well worked-out plan, and the support of others, including your manager.

Career paths are rarely linear, particularly in this day and age, and instability is increasingly a characteristic of career development. The authors argue, and importantly so, that developing a flexible career plan is an essential tactic for women to employ if for no other reason than it will help them to meet their personal and professional goals simultaneously. Do not become retrospective about your career, stress the authors, but instead take an active role in constructing it in the first place. After all, careers do not simply revolve around projects but encompass interpersonal relations and individually based actions over the long term.

Students will find the sections on Getting a Rewarding Job, Strategies for Students in STEM, and Time Management useful, while career women should enjoy the sections on Work-Life Balance, Family Support, and Career Skills and Strategies. Tenure Strategies for New University Faculty, Radio and TV Appearances Are Opportunities, and Personal Networks and Mentors serve to ease the transition of junior faculty into academic life.

In the section on Career Skills and Strategies, the authors attempt to provide a framework within which young women can develop a career plan. Rather than basing it on good luck or the path of least resistance, “a career plan is a matter of making decisions and taking responsibility for the outcomes”. The handbook suggests tips for building long-term career objectives based on core values and lifetime personal objectives that are not tied to one’s current or short-term situation. And building the capacity for flexibility into your plan is paramount, say the authors, as it can be easy to lose sight of one’s goals when partners or family are factored into the work-life equation.

Strategies for Students in STEM outlines how students can assess their learning style and level of risk assessment, how to deal with harassment and intimidation, and tips on how students can “work hard, but work smart”.

In Getting a Rewarding Job, the authors offer very basic advice on how to prepare job applications, but go into more detail on how to handle the interview process. They provide some interesting tips derived from the assumption that women handle interviews differently than men. For example, women should avoid the tendency to use softening phrases, such as “a little bit like” or “sort of,” during interviews. There are also some very useful tips on negotiating salaries and benefits.

Graduate students thinking about entering academia, and women (and men) who are about to, will find the section on Tenure Strategies for New University Faculty particularly beneficial. The authors pay a great deal of attention to the tenure process in Canada, including:

- " How to market yourself during the application process

#### **The Handbook Is Intended For**

- " Young Career Women
- " Senior Students
- " Managers, Deans, Directors, Leaders
- " Human Resource Personnel
- " Partners and Families
- " Postsecondary Institutes, Governments, Industry, and Professional Organisations

- " Getting through the interview(s), including standard questions to prepare for
- " Negotiating the job offer--“If you do not ask, you are unlikely to get”
- " Tips for constructing a successful research program
- " Preparing an effective tenure dossier, and
- " Awareness of gender influences on the tenure track

Careers in STEM tend to attract high-achieving women because of the noticeable gender imbalance, skill requirements, and reasonable salaries. But careers in STEM are about more than intellectual and financial rewards, according to the authors. They can also provide leadership roles, recognition, and positions of influence. The section Women Are Leaders addresses the importance of leadership and encourages women to develop their leadership potential. Women’s leadership will not only encourage younger generations but also help organisations to “change in ways needed by women, do more things that serve women, and become better places for women to work, succeed and contribute”.

In many ways, the handbook reinforces what we already know or suspect about the issues faced by women in STEM. But it also emphasises the motivations for women to pursue successful careers in these disciplines and outlines the skills and career management strategies that are needed to make that happen. It brings together facts and theories from published research, as well as first-person advice from women in many science and technology fields.

For those young women seeking to successfully balance their career in STEM with their family life, the handbook is an inspiring read rather than a prescriptive treatment. For students, it's an interesting and thought-provoking, as well as instructive, practical guide. The professional in STEM, however, will probably need more detail, but the handbook’s extensive resource and reference listings, which appear at the end of each section, should provide a good starting point.

As a scientist interested in careers, I found the book insightful and an important resource for young career women, particularly those thinking about both pursuing an academic career and starting a family.

Copies of *Becoming Leaders: A Handbook for Women in Science, Engineering and Technology*, by F. Mary Williams and Carolyn J. Emerson, are available for CA\$15 each from the Chair for Women in Science and Engineering (CWSE) Office at Memorial University, St. John’s, Newfoundland. You can order by e-mail (to [cwse@mun.ca](mailto:cwse@mun.ca)) or fax (709 737 7658). Or visit the [WISE](#) Web site for more information.

### **Other Audiences**

There isn’t room here to go into details about all 16 sections in the handbook. However, the following sections ought to be of particular interest to deans, department heads, and managers:

- " Proactive Diversity for Academic Deans and Department Heads
- " Diversity Guidelines for Managers
- " Sexual Harassment
- " Promoting Participation-Leadership, Excitement, and New Traditions, and
- " Employment Equity Legislation and Guidelines

