



**Best Practices for the Retention
of
Women Engineers and Scientists
in the Oil and Gas Sector**

A Report from *New Frontiers, New Traditions*

**A National Conference for the Advancement of Women
in Engineering, Science & Technology**

July 6-8, 2000, St. John's, NF

by

**Carolyn J. Emerson
F. Mary Williams
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CWSE-2001-01



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Best Practices for the Retention of Women Scientists and Engineers in the Oil and Gas Sector

1.0 Background

1.1 Women in Science, Engineering & Technology Fields

Women's participation in science, technology, engineering and mathematics (STEM) studies and careers has increased over the past several decades to varying degrees. The enrolment of women in undergraduate engineering courses in Canada, for example, has increased to 19.5% for 1998/9, up from 15.5% in 1991/2.¹ In the broad category of natural sciences, engineering and mathematics occupations in Canada, women in 1999 comprised 19.6% of the workforce (up from 16.7% in 1987).² Within this spectrum of careers, females (1996 data) were most highly represented in the life sciences areas at 28%, made up 24% of the physical sciences, and were 8.8% of engineers.³

1.2 Women in the Oil and Gas Sector

Two reports by Dowse *et al.* summarize women's status in Canada's petroleum sector from 1997 Statistics Canada data.^{4,5} While females make up 24.2% of employees in this sector, not surprisingly, the majority of them (60%) are concentrated in clerical, sales and services positions. Women held 3% of the technical/trades positions, 35.5% of management/administration positions, and 26.2% of professional occupations, including scientists and engineers, though primarily in junior and intermediate positions. As an example, 15% of the geological, geophysical and engineering professionals at Chevron Canada Resources are women. A 'casual survey' of several large companies in the oil and gas sector in Newfoundland revealed a range of 1.1-7.5% of engineering, professional or technical/trades positions being held by women.⁶

1.3 Characteristics of the Oil and Gas Sector

The petroleum industry has been well established for decades in western Canada and is an emerging and rapidly growing industry off Canada's east coast. The sector contributes a significant amount to the country's GDP, and is a major contributor to the economies of Alberta, Newfoundland and Labrador, and Nova Scotia. Its growth and rapidly evolving technological base offer significant opportunities for engineers and geoscientists.

The industry is characterized by being highly competitive, profit-driven, and fast changing. To provide the broad experience that can translate into management potential, companies encourage employees to change positions every 3-5 years, beginning with gaining technical expertise in a variety of up and downstream components of the industry. As one company puts it, "change is encouraged on at least one of three dimensions: geographical, functional and service". These factors mean that the sector has traditionally required a high degree of mobility of its employees and has usually included fieldwork, particularly among its engineers and geoscientists. That mobility may involve travel to other, often remote sites for rotations, or relocation for longer periods of time.

This is clearly a challenge for employees in achieving a satisfactory balance between professional and personal lives, and a particular difficulty for women who bear the primary responsibilities of child, domestic, and now elder-care.

The geographical setting, physical operations and history of the industry, together with the traditional make-up of its workforce have also shaped and reinforced a corporate culture in which men much more than women have felt valued, been encouraged to contribute, and been professionally successful. Dowse *et al.* describe the culture as being *dominated by values, beliefs, and styles of behaviour that discourage alternative perspectives and modes of expression*. In turn, the lack of women in most levels and particularly in senior management has not only held back institutional change, but has also provided few mentors for more junior women. Senior women have often been the ones to leave the sector (with the company losing, as a result, valuable experience, knowledge and client relationships). It is also often the case that many senior male executives are in traditional families and may not have experienced the changes necessitated by dual career families. Further, the informal culture, often termed, the 'old boys network', has resulted in lack of accessibility of information and support for women's progress in the industry.

It is also important to recognize that there are critical differences in the philosophy and culture of the large oil and gas companies vs. the service industry. While the former are the managers of massive projects and broadly speaking, 'in control' of the pace of development, the latter are 'on demand' companies that must respond to the initiatives of the petroleum industry and go to wherever the projects are located. There are thus differing constraints and degrees of flexibility that may influence workplace culture and career opportunities and support.

1.4 Opportunities

The petroleum industries are changing, however. Technology is rapidly transforming the landscape of the oil and gas sector, with settings that have become complex, information rich, and scientifically diverse. This rapidly changing workplace is generating new standards and paradigms. New skill sets are being valued, new management practices are needed to capitalize on diversity in style and analysis, and new workplace policies demonstrate respect for personal development and balanced lifestyle. At the same time, more women are graduating from post-secondary institutes in programs providing entry into this sector. It is timely to create and support the *new traditions* which will benefit the industry and all of its employees. Science and engineering careers offer an important opportunity for women, in particular, to have challenging and rewarding professions that provide significant economic autonomy.

2.0 Workshop Initiative

2.1 New Frontiers, New Traditions Conference

New Frontiers, New Traditions - a National Conference for the Advancement of Women in Engineering, Science and Technology was held July 6-8, 2000 in St. John's, Newfoundland. Over 240 delegates attended from every region of Canada and from the

US and Sweden. They comprised professional engineers and scientists, representatives from industry and professional associations, and those working in agencies that advocate women's advancement. The oil and gas sector was well represented among delegates at the event. Thirty-three papers presenting research results and case studies formed the core of the new information presented at the conference. Collectively, the papers represent our current understanding of the complex gender dynamics of people in science and engineering work and study environments. Some of the papers presented were the first Canadian benchmark for issues that have been explored in other countries. Other papers provided entirely new perspectives. The 'best practices' workshop on the oil and gas sector was among 12 panels and workshops in which information was delivered in a more direct and interactive manner. The full conference papers and workshop outlines are in the printed proceedings and are available electronically at www.mun.ca/cwse.

2.2 Workshop: Best Practices for the Retention of Women Scientists and Engineers in the Oil and Gas Sector

This 3 1/2 hour workshop was held July 6, 2000 as part of *New Frontiers, New Traditions*. Its purpose was to bring together those in industry who work in positions promoting diversity, together with women scientists and engineers from the sector, to identify effective workplace policies and practices that support and advance women's careers in the sector, and thus enhance retention. With the underlying rationale that change has to happen *within* companies, the strategy was to be positive and forward-looking, inclusive of employers, and supportive of their best efforts.

Susan Sherk, Human Environment Consultant, AMEC Earth and Environmental, and an individual highly experienced in the petroleum industry and women's participation in the sector, designed the format and facilitated the workshop. The matrix of the workshop panel included a mix of perspectives from the large oil company component and the generally smaller, service and contracting companies; presenters occupying a range of positions that spanned a human resource specialist, senior manager and a woman with an individualistic technical career; and the personal experiences of two sisters from rural Newfoundland who followed different career paths in engineering in the sector. About fifty individuals from industry and from agencies interested in policy attended and participated in the session. The Workshop outline appears in the Appendix.

3.0 Workshop Report

3.1 Introduction

This document presents the outcomes of the *New Frontiers, New Traditions* Oil and Gas Workshop. These outcomes, augmented with information from current employment equity research in the sector ^{4,5,7,8}, and specific examples from the companies acknowledged later in the report, yield a set of the best practices for the industry to retain, and advance the careers of, women engineers and scientists.

The 1999 report by Dowse *et al.*, *Women in Canada's Oil and Gas Sector*⁴ provides excellent background data on women's employment in the sector, and women in petroleum-related educational programs and associations. They also describe the barriers to women's full participation and present the approaches of some companies to enhance diversity. Selected and summarized information from that document appears in the report, *Gender Equity in the Oil and Gas Sector: International Comparisons and Lessons* produced for the Oil and Gas Sector Programme Pakistan, CIDA initiative.⁵

3.2 Value of Diversity

Progressive companies recognize the necessity of having a diverse workforce, drawing on more points of view, expanding innovative thinking, and supporting the full contributions of all of their employees. *Diversity management* has thus replaced initiatives formerly categorized as affirmative action, and is promoted as an essential component of a competitive business strategy. Among the advantages of diversity are -

- Access to the best talent in an increasingly competitive market
- Enhancement of innovative solutions to problems
- Better match with market-place/clients
- Increase in productivity/loyalty

3.3 Organizational Support for Diversity

All participating companies recognized the value of diversity in their technical workforce and supported the increased representation of women. There was also acknowledgement by participants of the varying degrees of success in attracting women, with department by department variation due to the nature of the operation, the experience and knowledge of managers about the issues, and commitment at the top. It was clear, however, that participants employed in the industry do promote similar careers for other women. This public event has hopefully encouraged participating organizations to continue their efforts to enhance the retention of women.

3.4 Workshop Limitations

The deliberate strategy to take a positive approach was successful overall, but did invoke some limitations on the material and information that could be collected. While most of the feedback from the event was positive, the workshop did not directly give satisfactory answers about why numbers remain low and why the oil and gas sector continues to be a *tough* industry for women.

4.0 Best Practices for Industry

4.1 Commitment from the Top

The conference workshop and numerous other presentations and reports highlighting women's personal experiences have underscored the absolute necessity of the commitment from the industry leaders in promoting diversity in their company/agency. Leadership in shaping a corporate culture that demonstrates respect and fosters teamwork is key. The commitment to diversity from the top should be articulated continually and at

every opportunity in many forms, in leaders' speeches, annual reports, newsletters, interviews, and on websites. Boards of Directors are clearly also strongly influential in the direction of the enterprise and women's presence and commitment to diversity at that level is essential. Employee-driven Diversity Advisory Councils have a very important role to play and if they report to the President or CEO, also signal commitment from the top.

Every institution is accountable somewhere for its actions and its budget. The political, business, or academic leaders to whom an institution is accountable are the ultimate agents of influence. They can set diversity objectives for an entire organization, or sectors of an organization, and specify the consequences of meeting or not meeting the objectives. They must also put in place processes and resources to achieve the objectives. In this way, diversity becomes a performance standard, for units and for individual managers. Effective leaders will present the objectives with a rationale and a commitment to success that reorients organizational thinking and opens the way for viable new traditions.

4.2 Management Training

Commitment from the top will not be enough to change workplace practices and attitudes unless those responsible for the day to day operation of the company are also advocates for the process. All managers must have a clear understanding of the importance of, and the issues around, diversity. Managers (and others in the organization) should be provided with the tools to support diversity initiatives, and strengthen leadership skills. Training sessions (with evaluation), conferences to discuss the issues and identify action items, and web sites are possible ways of providing these tools. The single most effective way to engage managers in the process is to *link the enhancement of diversity to performance reviews and salary assignments*.

4.3 Organizational Policy & Programs

Human resource policies of companies can provide a supportive and, indeed, motivating framework to enhance the retention of women scientists, engineers and technologists. Staff surveys with newly hired employees as well as with longer term staff can bring first-hand experiences and improve policies and practices, and results communicated back to employees indicate that their input was valued and acted on. Exit interviews as well can highlight successful policies and point to areas for improvement.

Personnel managers and recruiters who are committed to the value of diversity and trained in the interviewing process to eliminate any discrimination more effectively bring out the skills and experiences of the potential employee. Panels that reflect an array of perspectives and acknowledge differing career paths and diversity of experience are important in this process. Inclusion of employees close to the level being hired also brings immediate first-hand knowledge. Interviewees should be informed about harassment policies and support and career development programs. Orientation sessions for new employees will underscore the value of diversity, and the company policy on harassment. Further, companies that routinely review the salaries/benefits of employees, checking for balance, particularly with respect to diversity, can have the opportunity to redress any anomalies that become apparent.

Progressive organizations have a clear, zero-tolerance, policy on sexual harassment and harassment prevention, with clearly defined processes to address situations that arise. Where strong disciplinary action is taken against a harasser, the employer who is open with staff about the action taken and why, reinforces the organization's values. Many companies provide harassment prevention training and workshops throughout their organization, and some link part of a leader's discretionary pay to decreases in harassment incidents within the group.

Comprehensive health and safety policies also ensure a physically safe environment in which to work. These encompass a variety of issues ranging from the availability of safety clothes and equipment to fit every employee, to appropriate arrangements for safe on-site accommodation, and travel and work in foreign countries.

Other policies directly affect the two areas most often cited as factors that influence the retention of women in the oil and gas sector, namely, **balance of career and personal life, and career development**. Progressive policies, indeed, will be strongly motivating with the added benefit of increasing loyalty.

4.4 Balancing Career & Personal Life

A conference keynote speaker and leader of a major consulting company talked of leading by example in her balance of family and career, and also by considering enacting family-friendly policies as an *investment* in her employees during their time of child-rearing. Such actions not only respond to employee needs, they have a strong motivational impact. These policies are inclusive of both men and women and encouraging their uptake further underscores the commitment of the employer in valuing life/work balance of all their employees. The following are examples of the policies in place among companies in this sector that contribute to advancing that balance:

- Strong health and benefits packages which have provisions for coverage of partners and children.
- Maternity/paternity leave provisions
- Family leave
- Other career breaks, leaves of absence
- Adoption expense reimbursements
- Dependent care assistance, e.g. contribution to child day-care expenses, reimbursement of additional dependent care expenses during business travel, assistance in expenses for care of co-habitant disabled child, partner or parent
- 'In house' day or after school care
- Summer camps/on-site activities for children
- Information/referrals for day care, elder care resources
- Employee Assistance Programs to provide help for mental, physical, emotional stress
- Spouses' Associations, family liaison representatives
- Flexible work schedules, e.g. flex-time, part-time work, job sharing, compressed work weeks, telecommuting, extra travel days, offset work schedules for couples with children
- Enhanced internal publicity and information about family-friendly policies to enable and encourage more employees, *especially* men, to utilize

- Use of sick time or 'people care' days for dealing with ill dependents
- Assistance for spouse seeking employment, e.g. sending resumes around to other businesses, arranging for interviews, dual career relocation assistance, spousal recruitment
- Travel assistance to relocate families, and language lessons and location information for accompanying partners
- Travel allowances, email accounts to allow family members to stay in contact
- Recreation associations, discounts, fitness opportunities

Policies are important, but progressive organizations back those policies with a demonstration of commitment to the employees who utilize these options. People in organizations with family friendly policies often hesitate to take the opportunity because of a concern that it will affect their career. Hence organizations that wish to know the effectiveness of a policy must monitor not only its implementation, but also its neglect.

4.5 Career Development & Training

All employees expect interesting and challenging work with the appropriate resources to do a good job. A progressive company intent on retaining talented women employees will have policies and proactive initiatives to advance their careers. Examples are:

- Education/training/career development plan individually designed for each employee including financial planning and personal life balance
- One-on-one mentoring
- Strengthening the (mentoring) network among women
- Collective mentor programs with several mentors of varying leadership styles
- Identification of women with high potential for consideration for new responsibilities or promotion (NB women are less likely than men to self-identify)
- Continual training and development opportunities including competency development and corporate management programs
- Identification or creation of *specific* development opportunities for individuals
- Assignment of women to 'non-traditional' assignments
- 'Job-shadowing' to expose women to different positions
- Bridging programs to train women laterally in other positions
- Educational leave
- Tuition reimbursement, payment of professional fees
- Internal and proactive methods of job posting, careers on line
- Tracking whether at least one woman was considered for every position; if not, why not, in writing
- Succession planning - identifying a group of individuals including at least one woman to fill every position
- Opportunities to stay in contact with the workplace while on leave
- Events where women professionals can interact with senior management

5.0 Best Practices for Others

5.1 Women Employees

It is clear that in a dynamic corporate environment, passive individuals are unlikely to advance. Women interested in career progress must take the initiative, express their ambitions, and take responsibility for their careers. Ideas were generated and shared in many sessions of *New Frontiers, New Traditions* on how to advance one's own career and achieve career satisfaction. Among the suggestions:

- Maintain your integrity, principles and values
- Do your best, prove yourself
- Get a mentor
- Make sure you're heard
- Become visible; let managers know what you have accomplished and that you are ready for promotion
- Go the extra step, e.g. with recommendations for next actions and new resources in a project report
- Learn how the systems work; know the informal factors that speed up advancement
- Make lateral moves to experience all sides of the business
- Remain a woman, but be aware of the different communication styles of men and women
- Network with men too
- Get the best childcare that you can afford
- Learn negotiating skills
- Ask for the resources you need to do your job effectively
- For additional training, look at an MBA or other business courses to give you management skills
- Raise individual issues when negotiating employment or promotion (they can often be addressed, whereas salary may be tied to benchmarks)
- Become active in professional organizations
- If sexually harassed, approach your superior early and with a professional attitude
- Pick your 'battles' and don't take roadblocks 'personally'
- Leave work at work
- Have a sense of humor

5.2 Associations, Government and Policy Makers

Outside organizations and government have a role to play in ensuring women's full participation in the oil and gas sector. They can set the standards, ask the questions, monitor progress, and demand performance and accountability. They can also lead by setting the example in their own sector.

5.3 Networking and Service Organizations

Women are encouraged to network, yet this activity often slides to the bottom of a long list of priorities. Organizations such as WISE work to support and strengthen the interaction between women in all stages of their careers. Such groups also give women leadership opportunities and validation of their own career choices through promoting them to others.

6.0 Reach and Recruitment

To broaden the talent pool from which to hire, industry can initiate and support programs that encourage young women to enter STEM studies and careers (e.g. career talks, tours, job shadowing, mentoring, summer hire of students). The sector can also support initiatives that increase women's access to training and employment.

7.0 Conclusions

Companies should be recognized for thoughtful and forward-looking policies and best practice initiatives. In the informal discussions, workshop participants, however, pointed out that policies are effective only when exercised. If the corporate culture has not accepted and integrated the policy into workplace routine, it will not be exercised.

While companies are supportive of progressive change, even with good intentions, the culture in this dynamic and highly competitive industry is persistent. The cycle of culture and traditions unfriendly to a minority (even if subtly), leading to slow growth of that minority, and resulting in slow change of traditions, is difficult to unravel. It requires deliberate action. Hence, the strongest of the best practices is to make managers accountable for diversity progress in their areas of responsibility.

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Imperial Oil
NOVA Corporation
Petro-Canada
Schlumberger Oilfield Services
Shell Canada
Syncrude Canada

10.0 Appendix

Workshop Outline

The oil and gas industry, comprising the major producers and the network of supporting companies, provides career opportunities in many different science and engineering specializations. Leading companies in the oil and gas industry have made significant efforts to attract and retain qualified women employees. The initiatives that produce the strongest positive results are termed “best practices”. This panel of human resource specialists and qualified women employees will present their initiatives and be part of the process of developing 'best practices' for the industry.

Workshop participants will obtain background information on careers and the factors that influence retention of women engineers and scientists in the oil and gas industry. Panel members will provide up to date information on company policies and practices, and engage in discussion with the audience to explore further initiatives. A workshop report which summarizes the discussions will be distributed to interested participants.

1:30 Introduction Susan Sherk

1:45 Case study Yvette Hughes and Sadie Sellars, engineers and sisters who took different career paths within the petroleum industry

Yvette Hughes, Manager, Geotechnical & Materials Engineering for Atlantic Canada, AMEC Earth & Environmental Ltd.

Sadie Sellars, Structural Engineer, Asset Integrity Team, Hibernia Management & Development Co. Ltd.

2:30 The oil industry approach

Deb Provias, Subsurface Evaluation & Reservoir Management Team Leader, Chevron Canada Resources

3:00 The service industry approach

Liese Borden, Diversity/Dual Career Manager, Schlumberger Oilfield Services

Marilyn Shortall, Human Resources Manager, Halliburton, AOC Brown and Root Canada Ltd.

3:30 Break

3:45 Reaction Peggy Smart, Oil Sands Business Unit, Imperial Oil

4:15 Questions and Discussion

Best Practices to Enhance the Retention of Women Scientists and Engineers in the Oil and Gas Sector

To help us evaluate this report and advance this initiative, would you please fill out this form and return to the address below or fill out the form on the site www.mun.ca/cwse and email to cwse@mun.ca. Thank you.

Are you an engineer ____, scientist ____, technologist ____, human resource specialist ____, manager ____, other _____?

Did you find this report useful? Yes ____ No ____

If yes, what information did you find useful?

Was there too much info _____, not enough _____, just about right _____?

Can you apply this information to your own work situation? Yes _____ No _____

What additional information would be helpful?

What further initiatives would you suggest for enhancing retention of women in this sector?

Would you like to receive information about WISE (Women in Science and Engineering) Newfoundland and Labrador? Yes ____ If so, please fill out the following information, or email us directly at wise@stemnet.nf.ca

Name _____

Mailing Address _____

Email Address _____

Return form to *New Frontiers, New Traditions*, Faculty of Engineering, Memorial University, St. John's, NF A1B 3X5. Thank you.

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