

Success Strategies for Women in Science: A Portable Mentor

By Peggy A. Pritchard (editor)

Reviewed by Angelika Börsch-Haubold, Germany

A professor once told me in a job interview that he prefers to hire women for his laboratory "because they get things done". Nonetheless, although a blunt question as to whether you plan to have children is certainly out of fashion, female scientists still experience situations that are politically incorrect. As long as women hold fewer than 20% of senior academic positions in science (in the USA and Canada; in central Europe it is well below 15%), this situation will continue. You may not be able to change the system, but you can prepare yourself before you enter it. This is why communications specialist Peggy A. Pritchard has compiled the essay collection *Success Strategies for Women in Science*.

Pritchard argues that every young scientist needs a mentor, a person higher up on the career ladder who is willing to share her experiences on how to get ahead. As not all students can approach such a person directly, she selected a circle of successful women scientists who give their personal advice in this "portable mentor". In its 12 chapters, the reader is led through a wealth of information concerning professionalism that is usually not part of the science curriculum. 'Communicating Science' is one of the core chapters, in which students preparing their first talks can learn how to convey confidence and win over the audience. The more

experienced scientist is reminded to learn at least the first few sentences of her presentation by heart. Less formal occasions, such as meeting colleagues, also benefit from preparation, and communication with the lay public either directly or via the media is best done using plenty of examples and metaphors.

The chapter 'Working Abroad' gives young scientists good reasons for broadening their horizons. The description of 'Networking' will help those who feel pressurised by the need to assemble a distinguished portfolio of discoveries to understand that teamwork is a win-win situation. An awareness of 'Personal Style' and good interpersonal skills are important when you start 'Climbing the Ladder'. Manage your time and train your brain, recognize turning points and cope with setbacks, ask for individual work solutions when you have children – the reader learns much more from this book than just advice on straight career building.

Unfortunately, this otherwise excellent book is marred by its opening chapters, which will especially puzzle scientists who are trained in careful reading and clear thinking. Here the reader is confronted with three rather redundant forewords. Next, Chapter 1 concentrates too much on success as the only goal of career management while other parts of the book quite sensibly deal with the need for

'Balancing Professional and Personal Life' and 'Transitions'. Finally, Chapter 2 offers a very general description of a certain gender-related training programme that was conducted in Germany between 2001 and 2004.

My recommendation to readers is therefore to skip over the first 40 pages to reach the wealth of practical, concisely written advice which is enlivened by short clippings of personal biographies. References at the end of each chapter include easily accessible websites, and the book ends with a comprehensive index. As far as communication goes, the book is the mentor.

Although aimed mainly at female advanced science students, the wide-ranging advice on how to optimise job performance makes the book a general guide to professional conduct. My personal favourite is the list of 'personal traits that help': gain a reputation for integrity, work on a high energy level, handle conflicts in a positive, productive manner, guard your language and develop an appropriate personal style. It probably is a good idea to start working on these issues as early as possible, and although the book has 'women' in its title, men should read it, too.

Science teachers in schools are important role models. They may be the first mentors for gifted pupils and their degree of professionalism has a

The Physics of Superheroes

By James Kakalios

Reviewed by David Featonby, UK

great impact on adolescents who still have to decide where to go. Teachers will profit directly from the chapters on communication skills, time management and mental strength, and they should pass on the information to their students. In addition, girls who are interested in studying science should be encouraged to read the biographical sections so that if they are ever subtly informed of their worker-bee status in the laboratory hierarchy, they become neither angry nor discouraged.

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Superman, Batman, Lightning Lad, Spiderman – they all apply the principles of physics to perform their extraordinary feats... or do they? Which laws are suspended, and which are extended? Which are indeed forgotten completely? James Kakalios's view is that many fundamental principles of physics can be better understood by examining the activities of superheroes in comic strips, some famous and some not so well-known. As the foreword comments, "Comic book heroes are fun, inclined planes aren't". Thus for teachers, this book is a fantastic resource of examples which, at all levels, can enliven some of the more mundane areas of the physics syllabus.

With sections on mechanics, energy (heat and light) and modern physics, students can be challenged to question the activities of superheroes, touching on many aspects of physics. All the heroes I have heard of, and a few more besides, are mentioned, and a good index allows the reader to consult entries on different heroes as well as widely separate topics such as gravity and gamma rays, temperatures and tension. Kakalios does not limit himself to the fantasy world however, but attempts to relate each topic to the everyday real world of motor cars, microwaves and molecules, enhancing the reader's understanding.

As this is an American book, I found the use of pounds and feet, rather than consistent SI units, somewhat frustrating, but the need for us European teachers to "do the sums ourselves" may not be a bad thing. The book is illustrated with many examples from the comic strips themselves, though these would have been more helpful in colour. Maybe at some point in the future, the publishers would consider producing a series of colour slides for use in the classroom.

So if you have not yet read *The Physics of Superheroes*, I urge you to buy a copy and enjoy the debate on why Superman was the "man of steel" and became the most unrealistic superhero of all, how Spiderman's strands have their limitations, and whether he understood electromagnetism.

This is a book that every science teacher should read. It is the kind of book that can be taken on holiday, read over a long period or in short digestible chunks. Either way, I am sure that once read, some of its contents will be used over and over again.

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