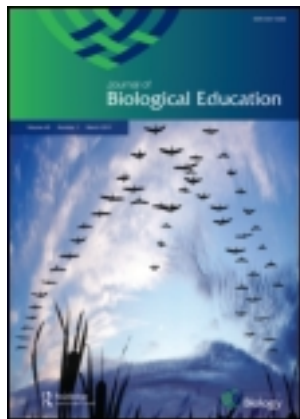


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Becoming a successful scientist: strategic thinking for scientific discovery

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Becoming a successful scientist: strategic thinking for scientific discovery, by Craig Loehle (Cambridge University Press, Cambridge, 2010), 249 pp., £19.99 (paperback)
ISBN: 978-0-521-73506-3

Reviewed by Nicky Souter, School of Education, University of Strathclyde, Glasgow, UK

'Science is a curious profession'.

Craig Loehle's opening sentence captured my attention and set the scene for this interesting and well-constructed volume. It is challenging and provocative throughout and is at its strongest when its frequent assertions initiate thoughts, contemplation, and reflection. Although its intended audience is students and researchers, I suggest that it would be a worthwhile read for everyone in the scientific community – researchers, academics, teachers, students from undergraduate stages onwards, technicians, engineers, managers and entrepreneurs, as well as interested observers.

Becoming a successful scientist is well-constructed and organised and includes only five chapters. Each one is packed with exemplification and deconstructs science to create maps of sorts. The introductory chapter challenges the nature of science, describes intelligence and unpicks the complexity and originality of scientific endeavour. It does not pull its punches on the frustrations and difficulties experienced in pursuing careers in science, and Loehle is especially critical of the lack of career guidance for part-time instructors in academic institutions. (At points, one wonders if the author is attacking the system or is anecdotally lamenting his own career crossroads.) He describes, in the second chapter, 'The inner game of science', and opines on the qualities, dispositions and pitfalls that are involved in strategic problem solving in particular. 'Even your own personal theory should be subject to merciless interrogation' (34). He is especially critical of the curricular structures that lead to barriers between disciplines in the belief that cross-fertilisation of ideas is an indicator of scientific health. Similarly, he criticises those approaches that lead school science to emphasise single correct answers.

He possesses an interestingly assertive style ('Science is ...') with his ideas offered in an accessible manner. Exemplification is provided from Archimedes to Darwin and from field ecology to string theory and zipper design. I did notice, and enjoy, a tendency to grouping ideas in 3s by way of emphasis, eg '... trouble shooting, data equipment and procedures'; '... constraints, tradeoffs and uncertainty'; '... shipwrecks, scurvy and sea monsters' and best of all (51) '... the bones of those consumed by the vultures of mediocrity, accountability and responsibility'. Some of the ideas are over-elaborated and exemplified. It is repetitive at points, eg reference to Darwin and worms and Gardner's theory of multiple intelligence. The volume could, I believe, have been considerably shorter with punchier reflections and examples. He uses provocatively eye catching headings, eg 'Don't read literature', which entice closer scrutiny and raise eyebrows even if the suggestions are well qualified and have considerable merit. In fact, the book leans on comparatively few references although those are well selected, well used and pertinent.

Chapters 3 and 4 provide useful suggestions in relation to practical and social dimensions of science. The short concluding chapter asserts (244) '... that scientists are largely uncoached and rarely introspective ... They spend ... almost no time learning the strategies of problem solving.' His solution could, I agree, be served in part by the concluding statement '... by application of the ideas presented in this book.'

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Microbiology: a clinical approach, by Anthony Strelkauskas, Jennifer Strelkauskas and Danielle Moszyk-Strelkauskas (Garland Science Taylor & Francis Group, New York and Abingdon, 2010), 733 pp., £46.00
ISBN: 978-0-815-36514-3

Reviewed by John Heritage, Faculty of Biological Sciences, University of Leeds, Leeds, UK

The unique selling point of this book is the experience of the family team of authors: one of whom holds a PhD, the second a DVM and the third an MD. That the authors are a family lends cohesion to

this book that is stronger than seen in many multi-author books. The breadth of their backgrounds also lends great strength to this introduction to the microbiology of infectious diseases. Of particular