

Review of Scientific Research as a Career

Scientific Research as a Career. By Finlay MacRitchie (Kansas State University). CRC Press, Boca Raton, FL, USA. 2011. xiv +117 pp. 15.3 × 22.8 cm. \$29.95. ISBN 978-1-4398-6965-9.

Having recently read the classical W. I. B. Beveridge books on scientists' work, I became curious about this new monograph. Many titles on this subject have been published in recent years, aiming to provide some background to students who might be interested in a career in scientific research. This book is presented in rather short topics of eight chapters dealing with distinct aspects of the scientific career. It is well written and organized and in many instances illustrates the author's reflections.

The Introduction presents some of the most important factors to consider when someone is involved in research, such as motivation, curiosity, effort, and the combination of study with experimentation. Chapter 2, "Scientific Training and Personal Development", provides information about different types of postgraduate studies, the nature of a doctoral thesis, the distinction between a true research program and simple data collection, careful data collection, analysis and interpretation, as well as the next steps to follow after earning a Ph.D. degree. Chapter 3 presents a brief overview on the scientific method, with emphasis on Karl Popper's concepts, how theories and hypotheses are elaborated, how scientific knowledge grows, and the deliberate (or not) failures in science. Chapter 4, "Attributes Required by Research Scientists", discusses criteria such as citations, conceptual thought, detachment and perseverance, ethics and outcomes, and "scientific services to community", such as peer-reviewing and committee work. Chapter 5 presents a particular view on management of science, with its negative impact on research, largely based on the author's experiences, but also referring to literature reports. It discusses issues related to research control, researchers' evaluation, and relationships among colleagues, including the impact of rigid hierarchical systems on scientific output. The interesting Chapter 6 discusses "Leadership in Science", wherein the author advocates the importance of good mentoring and supervision and the importance of authority on the relationship among peers. Chapter 7 shows a series of examples of well-known scientists who had successful careers, such as Marie Curie, Darwin, and others. Finally, in Chapter 8, "Future Challenges for Scientific Research", the author discusses two points that he considers of seminal importance for the future of science: the current work environment where scientific research is developed and the restrictions that have been established for scientific research in recent years, both of which present much more negative effects than beneficial.

It was interesting to note that, throughout the book, the author presents both the beauty and the difficulties of scientists' work. In adopting such a structure, would the book organization stimulate or discourage young students aiming to pursue a scientific career? Not only does the author intend to give practical and useful information to the reader, but he also illustrates the challenges and rewards faced by researchers,

based on his own experiences and considerations. MacRitchie shows how much struggle and effort is necessary to carry out a scientific career, including the necessity of dedication in studies and work, the difficulty in finding good ideas for research projects, the care in supervision of students, but above all the importance in dealing with people. This is an important aspect that demands considerable self-preparation and is not very often addressed in the education of Ph.D. students, since it requires experience rather than explanations. The author's personal experiences are given as examples of how a scientific career requires stamina, determination, and also wisdom. In this sense, the book is provocative. It is definitively worth reading, by both those intending to get information on how to proceed into a scientific path and established scientists who consider that their work is a bit more than just getting good publications.

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■ AUTHOR INFORMATION

Notes

The authors declare no competing financial interest.

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