

safe to say that, for now, organization by format is the most popular and the most obvious way to structure library research material. Wheeler does, however, offer very thorough examples of handouts and test materials that are exactly what most beginning instructors will want. And she supplies the answers for teachers.

The book is a big one – 8 and 1/2 by 11 inch format, and over 600 pages long. The look is Scarecrow's usual untidy, unjustified type-written format. One wonders for how much longer Scarecrow can continue this bad service to its authors, most of whom deserve better treatment. In an age of desk-top publishing, their sloppiness seems absurd. It is difficult to find one's way around in the book – no running titles or comprehensive index, for instance, are included.

With this caveat on the physical properties of the book aside, one can recommend this book to academic librarians needing to design a coherent programme of library instruction for undergraduates. Wheeler describes her own goal in writing thus: "A positive, pragmatic approach to the near-future, based on practice and experience, is the intent of this book" (p. 327). It is a good self-description. The book provides to the librarian/teaching faculty, the pattern pieces with which to begin course design.

Stager, David A. A. *Focus on Fees. Alternative Policies for University Tuition Fees*. Toronto: Council of Ontario Universities, 1989. pp. 160. Price \$10.00. Reviewed by Paul T. Brinkman, Senior Associate, National Center for Higher Education Management Systems (NCHEMS)

As the author states at the outset, comprehensive treatments of tuition and tuition policies are virtually non-existent. He sets out to remedy the situation, and succeeds in doing so. Any fear that the book will be narrow in scope, because of its initial focus on undergraduate tuition in the province of Ontario, can be laid aside. It is quite broad in its coverage of tuition patterns and other pertinent data, and of various conceptual matters related to policy alternatives.

The book begins with an historical treatment of tuition policy in Ontario, which is followed by a longer chapter on the history of tuition rates in Ontario and elsewhere, set in the context of other prices, student costs, institutional costs, and family income. Both segments are nicely done. The developments described in the policy chapter are all too familiar – a succession of policy studies matched by the virtual absence in practice of any clear cut, much less consistent policy on tuition.

Not surprisingly, the historical data on tuition reflect the absence of policy, as no rationale is discernable. For example, the share of operating costs borne by students in the province changed dramatically during the 1970s (first down, then up) but apparently not by design. The author presents an admirably long view on changes in tuition, on occasion using a time series that begins in 1929. He is especially insightful when discussing how tuition setting became entangled in Ontario's overall financing of higher education. Eventually, the universities lost control over tuition setting, practically speaking, even though they retained the legal authority to set tuition.

The chapter on access to college begins with a fundamental truth: "... accessibility is not so much a singular policy as it is a collection of socio-economic objectives that similarly require a collection of public policies" (p. 45). Tuition policy is only a small piece of the action, as the author notes, because tuition is only a small part of the cost of attendance. This is indeed the case across Canada and for three-fourths of the students in the United States. Students in many private institutions in the United States wish it were true for them as well, but this is more a matter of choice than of access.

The author explains how accessibility can be addressed along two dimensions: the capacity of the higher education system to meet student demand and society's willingness and ability to ensure equal opportunity. He deals at some length with the factors that influence enrollment. It is an adequate review on the whole, although he oversimplifies at times. For example, he is a little too quick to dismiss the effects of student aid in altering the socio-economic mix of the student population. There have been instances, such as the G.I. Bill in the United States, when student aid has had a major impact in that regard. By contrast, his discussion of the trade-off between quality and quantity is testimony to the broad range of ideas he brings to the accessibility issue.

At times he is almost too successful in convincing the reader that tuition's role is of modest consequence. If tuition is of so little importance, then why all the fuss? Indeed, why the book?

His major conclusion regarding accessibility is that finances are not a significant barrier for the great majority of students. This is probably true, especially when finances refer only to the adequacy of financial resources on hand at the time of enrollment. As he emphasizes, the long-term influence of family wealth on the hopes and aspirations of youngsters is another matter, and, in instances where poverty prevails in the early years, one not easily addressed by the availability of subsequent student financial aid.

The author's treatment of rates of return to a college education is brief but thorough. He demonstrates their cyclical nature as well as their current high level – as the 1980s draw to a close the rates are at historic highs and still rising. He also discusses the apparent rigidity of their interoccupational structure (that is, some programs of study consistently lead to higher rates of return than do others). He could have done more with the sensitivity of private rates of return to the costs incurred by students.

Although he was not charged with making formal recommendations, the author concludes this portion of his analysis by arguing that high rates of return to both individuals and society justify increased contributions to the funding of higher education by both students and society. He also indicates that the rates do not suggest a need to change the ratio of the shares between the government and students. Institutions will no doubt be happier with these conclusions than either of the other two parties.

The author correctly emphasizes the need to keep alternatives for determining the level and structure of tuition fees clearly distinguished from alternatives for

financing those fees. He goes on to argue, however, that the two issues should be decided separately and then be blended in a combined policy. Is this also good advice? It is likely to be better advice when control over tuition and student aid resides in a single entity, whether government or university, than when control is split. What happens, for example, if the universities have the authority to raise tuition, and they do so dramatically, but the government is unwilling or unable to increase student aid? In other words, what happens when the policies are not complementary?

The author's treatment of alternative approaches to setting tuition is systematic. He begins with an overview of what the public thinks about tuition as revealed in recommendations from public commissions and public opinion polls, and a review of actual tuition policies in the various provinces and the United States. He then presents a schematic of six approaches ranging from zero to full-cost fees, and proceeds to give brief, sometimes cursory considerations of each option. The most thorough treatment is accorded differential tuition, wherein tuition differs in proportion to expected rates of return or to educational costs (either by level of instruction or by type of program). He concludes this segment with a discussion of alternative ways of making annual adjustments and a modest simulation analysis of the effects of different policies on tuition levels.

Appropriately, aspects of the microeconomics of universities are incorporated in the analysis. In commenting on the long-run decline in total university expenditures per student, the author dismisses the possibility that this development could reflect economies of scale resulting from growth in university enrollments. There is considerable evidence, however, that economies of scale are realized in higher education. It is also true that these economies are more voluntary than inevitable in the size range of most public universities. One might argue that financial difficulties encourage universities to take greater advantage of latent scale economies.

The effects of scale are tangential to the main themes in this book. A more pertinent instance where the treatment of a topic is misleadingly thin is the discussion of the effects of student aid in the form of grants. While we have much to learn about this topic, the author understates what is known and does not capture the relevant literature as well as he does in dealing with other matters in the book. He does provide interesting data on loans, levels of indebtedness, and default rates.

The last chapter is a compendium of various approaches to financing tuition. The author provides at least capsule accounts of parental contributions, grants, loans, tax credits and deductions, vouchers, various prepaid tuition plans, and contingent repayment loans. The material presented is largely descriptive in nature, but he does summarize strengths and weakness in some instances, particularly when such assessments can be found in the literature.

The book is written from the perspective of public higher education, as befits its context and purpose. Some U.S. readers with a private higher education point of

view may find certain perspectives, such as tuition as a revenue stream for institutions, treated too lightly.

Overall, this is a helpful, well written book. The author asks the right questions, frames the issues in interesting ways, displays a knack for finding pertinent data, and demonstrates an admirable command of the relevant literature. Practitioners will find this a useful book. They will appreciate the conciseness with which various topics are treated. An index would have added to its value as a resource book, but it is sufficiently well organized that one can find a particular topic without much difficulty. The book also has a place in an academic setting. It would make an excellent text for classes on higher-education finance.

M. Christine King, *E.W.R. Steacie and Science in Canada*, Toronto: University of Toronto Press, 1989. xii+243. Reviewed by James P. Hull, Department of History, Okanagan College

The essence of what is wrong with this book is contained in its title. It should be called "E.W.R. Steacie and the National Research Council". Unfortunately, the NRC, which invited the late Dr. King to write this book, cannot bring itself to admit that its story is not the story of science in Canada.

The subject of the book, chemist E.W.R. Steacie, joined the NRC in 1939 and was President of the Council from 1952 until 1962, shortly before his death. After Christine King's own unfortunate death in an automobile accident, long-time NRC archivist A.W. Tickner helped prepare the manuscript for publication. In spite of his efforts and those of University of Toronto Press editors, the book suffers from being a manuscript unrevised by the author. The prose is too often awkward and the narrative disjointed. Thus, for instance, the discussion of Steacie's dissertation supervisor is puzzling and of little point, while the passage on the creation of NRC vice presidencies is very confused. Other shortcomings are more substantive. The assertion that the NRC was established "ostensibly as the result of Britain's concern that the dominions should each have an organization akin to its own newly created Department of Scientific and Industrial Research" (p. 45) is erroneous and misleading. A mounting weight of scholarship clearly shows that the traditional picture of the underdeveloped state of research prior to World War One, which King accepts, is wrong. As well, King's overly-rosy picture of inter-allied technical cooperation in World War Two and her story of early Canadian participation in nuclear development compare poorly with recent work by Zimmerman and Bothwell respectively. The assertion "that traditionally the country had made its mark almost exclusively by producing raw materials" (p. 129) in a context of post-WWII Canadian science policy is absurd. Similarly, the assertion that up to the Second World War Canada was a supplier of raw materials in exchange for British manufactured goods so as "to serve the clearly defined requisites of the British Empire" is completely ahistorical; such notions had been abandoned before Confederation.