Biosciences on the Internet
Biosciences on the Internet

A Student’s Guide

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Biosciences on the Internet: A Student’s Guide
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While bringing advantages of depth, scope and communication, the ease with which information, ranging from excellent to poor quality, can be obtained from the internet presents problems of both quality and quantity. Copyright is also a serious issue. In journals, periodicals and books, the reader can be sure that the work has been critically evaluated before publication. Although there are cases of extreme views on the internet, it is usually easy to recognise these for what they are. However, there may be more subtle situations where a naive student might not recognise that information is unreliable, or that a particular line is being adopted by the author.

Teachers are likely to find it difficult to keep up with the wealth of rapidly changing information and the student undertaking research may be substantially alone in ‘hyperspace’. Peter Boyce has suggested that in future the whole internet may be the electronic journal; sophisticated search programs could mean that there is only one journal, and it is the internet.

Students need to be aware of the need for care when they are loose on the internet. Even primary school children (5–11 y) are being introduced to the internet and education for prudence therefore needs to begin at a young age. The development of a prudent attitude should be guided and monitored by both parents and teachers and this book represents a contribution to this effort.

The aims of the book are to:

- introduce bioscience students to procedures for efficiently using the internet;

- review the benefits and problems of internet use, including issues of copyright and plagiarism;

- review a range of bioscience sites. These have been classified on the basis of the England and Wales advanced-level curriculum studied by 16–18-year-old biology students, but many other bioscience sites have been included.
The book is therefore primarily aimed at senior secondary school students and first year undergraduates but should be useful for teachers of biosciences at all levels. Some sections are specifically addressed to teachers (e.g. 3.4).

As an experienced university tutor, I am aware that many students lack essential skills in some areas of their performance. Consequently, the brief was extended to include aspects such as essay writing, poster presentations and organisation of information. These skills do not directly underpin use of the internet but will almost certainly be employed in relation to the downloading of information.

The Higher Education Funding Council in the UK is now specifying the nature of study skills for university programmes. Generic patterns of skills are appearing. While the sources used in a literature search might differ from subject to subject, the nature of the investigation may transcend disciplines. For example, a historian might investigate county court records and a biologist might investigate the raw data held by the Environmental Agency. However, the methodology in both disciplines uses a similar kind of logic. Consequently, this book was not intended to be a directory of methods which are unique to biosciences but was intended to offer common-sense advice on how to use the internet in a biosciences context.

Although the book addresses generic issues, it is written by a particular kind of biologist - in this case an ecologist. It therefore presents my subjective view as an experienced university teacher. Nevertheless, I would like to think that a molecular biologist might have written a similar kind of book, though the examples would undoubtedly differ. Although I have tried to focus on biological examples throughout the text, hopefully the book will be useful to students from a range of disciplines.

Of necessity, most of the images and procedures have to relate to a particular system. In this case, I have tended to use Netscape rather than Internet Explorer. Currently, the former has more useful features, is easier to use and is more sophisticated. I have also occasionally referred to Windows-based software packages such as the word processor package Microsoft Word. Apple users should find that the advice is general enough to apply to Apple systems too.

The book has three parts. Part 1 concerns basic principles of using the internet, including issues of plagiarism (‘copying’), and evaluation of quality in web sites and managing files. In Part 2, the reader is guided through some typical searches. I have tried to make this section as readable as possible; ideally it will entertain as well as be instructive. Part 3 is an annotated list of web sites; these are websites that appear to contain reliable information and appear to be relatively stable in time. To check the
latter, these sites were visited a number of times over a period of months. Sites which were not stable were dropped. Part 3 also contains a list of subjects commonly used by national bodies in the British educational system which examine students aged 16–18 years (A levels), just prior to attending university. Each of these subjects has been linked to an appropriate web site. Here, I have tried, perhaps with limited success, to select sites which were appropriate to the level of the students concerned.

To try to make what could be a dry subject more readable, I have used the personal pronoun (‘I’) where there is an action, such as a search, which I have undertaken personally. The second person (‘you’) has been used when offering advice on what the reader might do in a particular situation. In general, I have assumed that readers will have access to a computer and know the basics of switching on, logging on and word processing. Just in case this is an over-assumption, the appendix contains a brief description of how to set up the elementary hardware of a home computer system.

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GBJD
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