

# **The New Walford**

## **Guide to Reference Resources**

### **Volume 1**

## **Science, Technology and Medicine**

Editor-in-Chief

**Ray Lester** BSc PhD FCLIP FRSA



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This volume is dedicated to the memory of

**John Walford** MBE MA PhD FRHistS HonFLA FLA DipLib

1906–2000



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# Preface

Although *The new Walford: guide to reference resources* (TNW) has a broadly similar purpose to John Walford's classic *Guide to reference materials*, its structure and content are quite different. Developments on the internet and the web have ensured that. We have focused much more on the needs of newcomers to the various areas of science, technology and medicine (STM), simplifying the book's subject arrangement, but at the same time considerably widening the types of resource described. Above all, whilst hardly creating a book that is bedtime reading, we have aimed to make the guide easily browsable.

There is greatly increased emphasis on the *producers* of STM information, on the basis that these are less likely to change than the individual resources that they generate. This includes a wide range of stakeholders (sponsors, regulators, critics, etc.) who make up the landscape of STM research and practice. Distilling the volume and wealth of resources now accessible down to a 'starter pack' of a few thousand items not surprisingly has been rather challenging; and there is no doubt that we will have been more successful in some subject areas than in others. We shall welcome feedback on the resource choices we have made via the TNW dedicated e-mail address:

[newwalford@facetpublishing.co.uk](mailto:newwalford@facetpublishing.co.uk). Most research for this volume was carried out mid-2004, however, **all URLs were checked in April 2005**.

It is not possible in a volume of this type and size to treat all the different viewpoints within each subject; especially in areas of controversy. The majority of the resources described reflect what the Editors perceive to be the currently dominant paradigms within STM. However, in a number of subject areas one or two

works are cited which depart significantly from the mainstream in their treatments. These are included simply to remind the reader that such alternative viewpoints exist and should be pursued in any comprehensive survey.

I am very grateful to the subject specialists for their contributions, also to the editors' managers in the libraries where they work; to the staff of the various libraries we have all used in gathering information – particularly, in my case, those at the British Library at St Pancras, the University of Sheffield Library, and the Library of University College London, including its librarianship subject specialist, John Spiers; to Stephen York, for his commitment, responsiveness and persistence whilst we developed the new software and data environment; to Kathryn Beecroft and Helen Carley (and originally Janet Liebster) at Facet Publishing, for their cheerful patience and excellent professionalism throughout a project that took much longer than any of us thought it would at the outset; and, above all, to my children, Catherine, Richard and Joanna, and my wife, Professor Sheila Corral, for all their love and support.

Ray Lester  
May 2005

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# Quick-start guide

## How TNW is organized

Entries are hierarchically classified by subject area to three levels:

- At the highest level are the *Subject Parts*, in the order Science, Medicine, Technology;
- At the next level are the twelve *Subject Groupings*, six in Science, three each in Medicine and Technology;
- Each Grouping is then sub-divided into around one hundred *Subject Fields*.
- There are also two generic collections of entries: one at the start, describing resources covering the whole of STM (and, in some cases, *all* disciplines) the other at the end, highlighting tools that are especially valuable for information professionals.

Within this structure, descriptions of resources are allocated to one of the subject areas and then placed within one of thirteen *Resource Categories*:

- [1] INTRODUCTIONS TO THE SUBJECT
- [2] DICTIONARIES, THESAURI, CLASSIFICATIONS
- [3] LAWS, STANDARDS, CODES
- [4] OFFICIAL & QUASI-OFFICIAL BODIES
- [5] RESEARCH CENTRES & INSTITUTES
- [6] ASSOCIATIONS & SOCIETIES
- [7] LIBRARIES, ARCHIVES & MUSEUMS
- [8] PORTAL & TASK ENVIRONMENTS
- [9] DISCOVERING PRINT & ELECTRONIC RESOURCES
- [10] DIGITAL DATA, IMAGE & TEXT COLLECTIONS
- [11] DIRECTORIES & ENCYCLOPEDIAS
- [12] HANDBOOKS & MANUALS
- [13] KEEPING UP-TO-DATE

For around a quarter of the resources, we have appended descriptions of associated or related resources (for example, additional items from the same producer or alternative views of the subject).

We do not duplicate or cross-reference entries within the set of resource categories for a specific subject

area: if a resource description could equally well be placed within two (or more) categories, it will usually appear in the category earliest in the sequence. However, we do frequently cross-reference (but not duplicate) resource descriptions between different subject areas.

Entries, including cross-referenced entries, appear alphanumerically by title within each resource category. Where a resource has a particular area or country focus that is not apparent from its title, we have added a geographical indicator.

The TABLE OF CONTENTS lists all the subject parts, groupings and fields, as well as the two generic sections, in the order in which they appear in the volume.

The TOPIC INDEX provides alphabetical access to the subject headings used for the subject fields and groupings. It also lists more detailed and alternative subject headings to the ones chosen for the subject fields, indicating where commonly sought topics are located within our subject structure (for example, 'Global warming' takes you to entries located in Meteorology & Climatology).

The TITLE/AUTHOR INDEX lists the titles and authors for all resources listed, including both main entries and associated resources. For organizations, we have also often provided cross-references for commonly-used acronyms and cross-references linking parent and subordinate bodies.

## How to find resources

- If you are looking for a known item, consult the TITLE/AUTHOR INDEX under the title of the work or the name of the author or organization associated with the resource.
- If you are looking for resources about a subject, browse the entries for the relevant subject part/grouping/field, using the TOPIC INDEX to target your search as necessary.

# MEDICINE

subject part heading

## Health

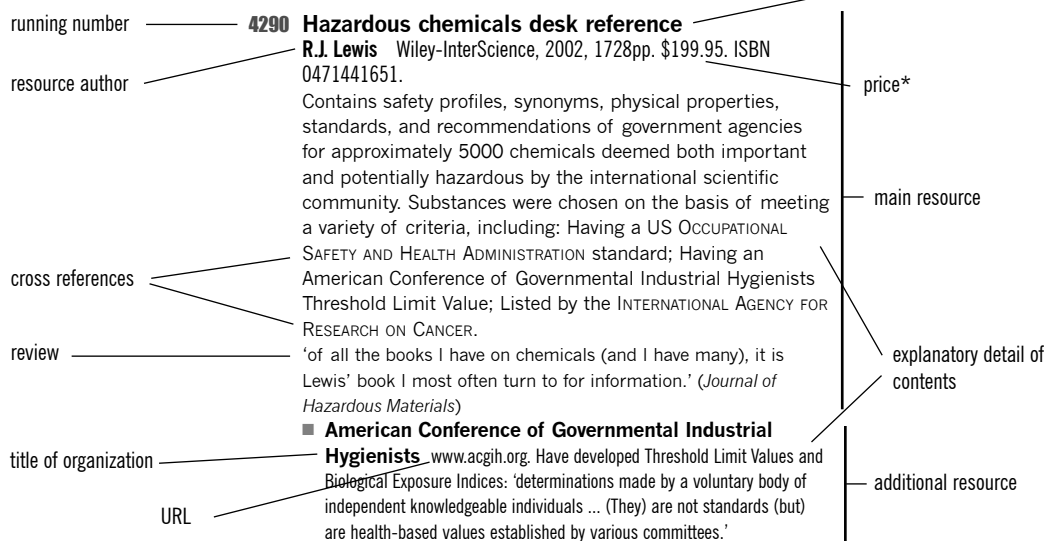
subject grouping heading

### Environmental & Occupational Health

subject field heading

#### Handbooks & manuals

resource category heading



\* Resources from primarily US-based publishers have been given US\$ prices; from those primarily based in the UK (or Europe) UK£ (or €) prices

hazardous chemicals see ENVIRONMENTAL & OCCUPATIONAL HEALTH 4222-4303  
 industrial hygiene see ENVIRONMENTAL & OCCUPATIONAL HEALTH 4222-4303

Topic Index entries

ACGIH see American Conference of Governmental Industrial Hygienists

**American Conference of Governmental Industrial Hygienists** 4290

**Hazardous chemicals desk reference** 4290

Lewis, R.J.  
 Hazardous chemicals desk reference 4290

Title/Author Index entries

# Editor and subject specialists

## Editor-in-Chief

**Dr Ray Lester** graduated in chemistry, took a PhD in chemical pathology, and then worked at the multi-national company Unilever as an information scientist/systems analyst. He was a subject specialist in several academic libraries before becoming Head of the Library at the London Business School. Subsequently he became Director of Information Systems at LBS in charge of all of the School's IT, library, audio-visual and telephone services, before taking up the post of Head of Information Services at The Natural History Museum, with a remit to manage the institution's IT, library, archive, publishing, and collections databasing services, and to chair its Information Strategy Group. Dr Lester also served on the boards of SCONUL and the Research Libraries Group.

## Subject specialists

### Catherine Carr

AERONAUTICAL & AEROSPACE ENGINEERING, AUTOMOTIVE & AGRICULTURAL ENGINEERING, MARINE ENGINEERING & NAVAL ARCHITECTURE, MATERIALS SCIENCE & ENGINEERING  
Catherine Carr has worked at Cranfield University's Kings Norton Library for over two years as an Information Specialist for Aerospace, Engineering and the Environment. During this time she has been involved with the development and maintenance of AERADE (Cranfield University's quality portal to aerospace and defence resources on the internet), academic liaison, student training and e-learning. After graduating with a degree in Physical Geography with Geology from Reading University she has also spent 21 years working in materials Research & Development Laboratory libraries (initially with TI Research Ltd, formerly Tube Investments Research, and then with Alcan International Ltd).

### Jim Corlett

DESIGN, MANUFACTURING ENGINEERING, MICROENGINEERING & NANOTECHNOLOGY  
Jim Corlett followed study at Cambridge University and North London Polytechnic with stints in the libraries at Imperial College and at The Nottingham Trent University. He was active within the SCITECH Group and worked with EEVL, the Internet Guide to Engineering, Mathematics and Computing. He has also produced and edited the Recent Advances in Manufacturing database for the past fifteen years. He now works for his own company.

### Joanne Dunham

MEDICINE  
Joanne Dunham is currently the Clinical Sciences

Librarian at the University of Leicester where she has worked in a variety of roles within the Medical Library since 1991. She previously worked at Charing Cross and Westminster Medical School, having taken her postgraduate library qualification at Northumbria University. Joanne is currently on the Committee of the University Medical School Librarians Group. Her recent professional achievements have included the setting up of a Clinical Librarian Service and a Primary Care Outreach Library Service; developing information skills within the medical curriculum through eLearning and building a partnership with an Ethiopian College of Medicine library service.

### Helen Hathaway

HYDROLOGY, OCEANOGRAPHY  
Helen Hathaway is Faculty Team Manager for the Faculty of Science in Reading University Library. Over the years she has acted as liaison librarian for many Schools in the Science and Life Science faculties including Chemistry, Meteorology and Physics and has close links with Earth Sciences. In this capacity she has recommended, selected and managed the budget for reference material including datasets. Her other role as Information Skills Coordinator gives a pedagogic basis to understanding how students learn and considerable practical experience of helping them to identify their information need and to choose and evaluate resources – whether reference books, databases, or quality national and international websites.

### Dr Jonathan Jeffery

PALAEONTOLOGY  
Jonathan Jeffery read Biology at the University of Birmingham, and studied for his doctorate at the University of Cambridge Museum of Zoology. He wrote his thesis on rhizodonts, giant predatory fishes whose fossilized remains were first found near Edinburgh. His postdoctoral research was based at St George's Hospital Medical School and University College in London, and later at the University of Leiden in the Netherlands. His research included evolutionary biology, palaeontology and embryology. He now works at the International School of Amsterdam, where he teaches children about palaeontology using fossil mammoth and rhinoceros bones found in the nearby Wadden sea.

### Gareth J. Johnson

MATHEMATICS, PHYSICS & ASTRONOMY  
Gareth Johnson is currently working within the University of Warwick Library Research and Innovation Unit. Previous to this he was employed at the University of York Library as their Sciences Librarian. His particular professional interests are in

the sciences, information literacy, teaching pedagogy and project management. He remains an active member of numerous CILIP branches and special interest groups, and as of 2005 is serving as the Honorary Secretary of the national University, College & Research Group of CILIP. He continues to write in various capacities, and is currently developing his first screenplay.

### **Nazma Masud**

CHEMISTRY

Nazma Masud is one of the chemical information specialists, at the Library and Information Centre (LIC) of the Royal Society of Chemistry, who run the Chemical Enquiries Helpdesk. At the LIC there is a wealth of hard/electronic copy resources ranging from rare or unique books to latest journals covering cutting edge technology some of which are accessible remotely. Her job is to look after members' chemical information needs using any appropriate resources, including online commercial databases, or to point them in the right direction. She also runs tutorials and writes training materials in support of this and markets their services to membership.

### **Roger Mills**

AGRICULTURE, FORESTRY, FISHERIES & FOOD

Roger Mills is Biosciences and Environmental Sciences Librarian and Oxford Forest Information Service Manager for Oxford University Library Services, UK. He is leader of the Bibliographic Information and Library Networks group of the International Union of Forest Research Organizations and active in the Aslib Biosciences Group and International Association of Agricultural Information Specialists. He is co-ordinator of the AgriFor (agriculture, forestry and food) section of the BIOME internet resource discovery service and works closely with CAB International, FAO and other international organizations.

### **Lorna Mitchell**

BIOLOGICAL SCIENCES, BIOTECHNOLOGY

Lorna Mitchell is the Natural Sciences Librarian & E-Resources Co-ordinator at Queen Mary, University of London. Her current responsibilities include enabling access to high quality electronic resources and teaching science students how to find and use those resources. Following a biological sciences degree and postgraduate diploma in librarianship and information studies, her career in libraries began at The Natural History Museum, where she spent several years as the Assistant Librarian in the Entomology Library.

### **Dr David Newton**

SCIENCE, TECHNOLOGY

David Newton is currently a patent information consultant and Associate Editor of the journal *World*

patent Information having previously been Head of Patents Information at the British Library for almost twenty years. He has a BSc and PhD in Chemistry and is member of the Chartered Institute of Library and Information Professionals. He is a former Chairman of the Patent and Trade Mark Group.

### **Linda Norbury**

CHEMICAL ENGINEERING & CHEMICAL TECHNOLOGY

Linda Norbury is currently an Academic Support Consultant for Engineering and Mathematics at the University of Birmingham, and this follows on from experience supporting engineering in similar roles at Aston University and the University of Nottingham. Before entering Higher Education she worked for the Institute of Energy in London, and for British Gas. She gained her Masters in Information Science from City University in 1989.

### **Bob Parry**

SPATIAL TECHNOLOGIES

R. B. Parry is Honorary Fellow, Department of Geography, University of Reading. A Reading graduate in Geography, he was curator of that university's map collection for much of his career. His last appointment was Senior Research Fellow. He is co-author or editor (with C. R. Perkins) of several reference books on cartography, including *World mapping today* (Saur, 2000) and *The map library in the new millennium* (Facet Publishing, 2001).

### **Alison Sutton**

METEOROLOGY & CLIMATOLOGY

Alison Sutton is Librarian in the Department of Meteorology, School of Mathematics, Meteorology and Physics at the University of Reading, where she manages an information service for the Department's undergraduate and postgraduate students and its world-leading research community. Prior to this she worked in university libraries in the Midlands.

### **Elizabeth Tilley**

EARTH SCIENCES (excluding HYDROLOGY, METEOROLOGY & CLIMATOLOGY, OCEANOGRAPHY, PALAEOLOGY AND SPATIAL TECHNOLOGIES)

Elizabeth Tilley has been Principal Librarian at the Earth Sciences Department, University of Cambridge since January 2002. A degree in Geography led initially to teaching but a career change resulted in a job at the Earth Sciences Library. A Masters degree in Library and Information Studies, and a six-month secondment within the University paved the way for the appointment as Principal Librarian. She is now regarded as a subject specialist librarian, with additional roles on local, national (Education Librarians Group, CILIP) and international (Map and Geography Libraries Special Interest Group, IFLA) committees.

**Dr Barry White**

CIVIL ENGINEERING, CONSTRUCTION & BUILDING, ELECTRICAL & ELECTRONIC ENGINEERING, ENVIRONMENTAL ENGINEERING  
Barry White has a first degree in chemistry and further degrees in the social aspects of science and technology. Prior to his current post as Faculty Librarian, Engineering and Physical Sciences, at the University of Manchester, he worked in industry and academia as well as the Library of the University of Nottingham. As a subject librarian he has held responsibilities at various times for mathematics, computer science, engineering, and the history of science and technology.

**Fenella Whittaker**

MECHANICAL ENGINEERING  
Fenella Whittaker is an Information Officer at the Institution of Mechanical Engineers. She has ten years' experience working in specialist libraries, including previous engineering subject experience as an assistant librarian in London Underground's Engineering Library. She gained her postgraduate degree in Information Services Management at the University of North London in 2000 and last year achieved Chartered status with CILIP.

# 50 good websites to try first

## SCIENCE, TECHNOLOGY & MEDICINE: GENERIC RESOURCES

### American National Standards Institute

[www.ansi.org](http://www.ansi.org)

### Max-Planck-Gesellschaft

[www.mpg.de/english/portal](http://www.mpg.de/english/portal)

### National e-Science Centre

[www.nesc.ac.uk](http://www.nesc.ac.uk)

### Resource Discovery Network

[www.rdn.ac.uk](http://www.rdn.ac.uk)

### Science Portal: Australia

[www.science.gov.au](http://www.science.gov.au)

## SCIENCE

### National Science Teachers Association

[www.nsta.org](http://www.nsta.org)

### Nobelprize.org

<http://nobelprize.org>

## MATHEMATICS

### American Mathematical Society

[www.ams.org](http://www.ams.org)

### The MacTutor history of mathematics archive

[www-history.mcs.st-andrews.ac.uk/history/index.html](http://www-history.mcs.st-andrews.ac.uk/history/index.html)

### Math Forum @ Drexel

[www.mathforum.org](http://www.mathforum.org)

## PHYSICS & ASTRONOMY

### Centre National d'Etudes Spatiales

[www.cnes.fr](http://www.cnes.fr)

### Interactions.org: Particle physics news and resources

[www.interactions.org](http://www.interactions.org)

### PhysicsWeb

<http://physicsweb.org>

## EARTH SCIENCES

### Met Office

[www.metoffice.com](http://www.metoffice.com)

### Palaeontologia Electronica

[www.palaeo-electronica.org](http://www.palaeo-electronica.org)

### US Geological Survey

[www.usgs.gov](http://www.usgs.gov)

## CHEMISTRY

### ChemSoc

[www.chemsoc.org](http://www.chemsoc.org)

### Chemistry Journals

[www.ch.cam.ac.uk/ChemJournals.html](http://www.ch.cam.ac.uk/ChemJournals.html)

### Reciprocal Net

[www.reciprocalnet.org](http://www.reciprocalnet.org)

## BIOLOGICAL SCIENCES

### ASIL Guide to Electronic Resources for International Law

[www.asil.org/resource/env1.htm](http://www.asil.org/resource/env1.htm)

### National Center for Biotechnology Information

[www.ncbi.nlm.nih.gov](http://www.ncbi.nlm.nih.gov)

### The Tree of Life Web Project

<http://tolweb.org>

## AGRICULTURE, FORESTRY, FISHERIES & FOOD

### Sea Fish Industry Authority

[www.seafish.org](http://www.seafish.org)

### WAICENT Portal

[www.fao.org/waicent/index\\_en.asp](http://www.fao.org/waicent/index_en.asp)

### World Organisation for Animal Health

[www.oie.int/eng/en\\_index.htm](http://www.oie.int/eng/en_index.htm)

## MEDICINE

### Health On the Net Foundation

[www.hon.ch](http://www.hon.ch)

### The On-line Medical Dictionary

<http://cancerweb.ncl.ac.uk/omd>

## PRE-CLINICAL SCIENCES

### The eSkeletons Project

[www.eskeletons.org](http://www.eskeletons.org)

### Center for Devices and Radiological Health

[www.fda.gov/cdrh](http://www.fda.gov/cdrh)

### Pharmaceutical Research and Manufacturers of America

[www.phrma.org](http://www.phrma.org)

## CLINICAL MEDICINE

### Bandolier: Evidence-based thinking about health care

[www.jr2.ox.ac.uk/bandolier](http://www.jr2.ox.ac.uk/bandolier)

### Communicable Disease Surveillance & Response

[www.who.int/csr/en](http://www.who.int/csr/en)

### National Institute for Health and Clinical Excellence

[www.nice.org.uk](http://www.nice.org.uk)

## HEALTH

### Food and Nutrition Information Center

[www.nal.usda.gov/fnic](http://www.nal.usda.gov/fnic)

### The Merck manual of medical information

[www.merck.com/mmhe/index.html](http://www.merck.com/mmhe/index.html)

### National Institute for Occupational Safety and Health

[www.cdc.gov/niosh](http://www.cdc.gov/niosh)

## **TECHNOLOGY**

### **British Library – Patents**

[www.bl.uk/collections/patents.html](http://www.bl.uk/collections/patents.html)

### **Technology Review**

[www.technologyreview.com](http://www.technologyreview.com)

## **NATURAL RESOURCES & ENERGY**

### **Commission on Sustainable Development**

[www.un.org/esa/sustdev](http://www.un.org/esa/sustdev)

### **Los Alamos National Laboratory Library**

<http://lib-www.lanl.gov>

### **Office of Energy Efficiency and Renewable Energy**

[www.eere.energy.gov](http://www.eere.energy.gov)

## **ENGINEERING**

### **International Maritime Organization**

[www.imo.org](http://www.imo.org)

### **Nanotechnology Now**

[www.nanotech-now.com](http://www.nanotech-now.com)

### **Royal Academy of Engineering**

[www.raeng.org.uk](http://www.raeng.org.uk)

## **INFORMATION & COMMUNICATION TECHNOLOGY**

### **bitpipe**

[www.bitpipe.com](http://www.bitpipe.com)

### **NSF: Directorate for Computer & Information Science & Engineering [USA]**

[www.nsf.gov/funding/research\\_edu\\_community.jsp](http://www.nsf.gov/funding/research_edu_community.jsp)

### **World Wide Web Consortium: W3C**

[www.w3.org](http://www.w3.org)

## **TOOLS FOR INFORMATION PROFESSIONALS**

### **Association of Learned and Professional Society Publishers**

[www.alpsp.org](http://www.alpsp.org)

### **D-Lib Magazine**

[www.dlib.org](http://www.dlib.org)

### **Scholarly Societies Project**

[www.scholarly-societies.org](http://www.scholarly-societies.org)

# Introduction

This Introduction covers:

- Introducing TNW
- What's new about TNW?
- The new information universe
- Selection and description of resources
- Organization and arrangement of entries

## Introducing TNW

The first volume of *The New Walford* (TNW) is a guide to reference resources in Science, Technology and Medicine (STM). It provides a collection of resources aimed particularly at helping people to research unfamiliar subject areas. It offers comprehensive coverage of the range of resources available in the networked world, but is necessarily selective in the set of items chosen for each subject field. Our aim is to get you started, to help you navigate uncharted territory and find the right types of resources to meet your needs.

This new guide builds on the reputation and concept of the classic *Walford's guide to reference material*, but we have made radical changes to the design, focus and layout. The internet and the world wide web have had a dramatic impact on the quantity and quality of information resources, especially in STM. The new information universe is diverse and complex with its mix of established and emergent media.

## What's new about TNW?

TNW has been completely 're-engineered' for the hybrid information world. There are seven key changes from 'The Old Walford'.

- *Focus on the newcomer* – TNW has been specially designed to help the less-experienced user of STM resources, particularly people researching a field for the first time.
- *Simpler subject arrangement* – TNW has moved away from the Universal Decimal Classification (UDC) and adopted its own straightforward three-level scheme of subject parts, subject groupings and subject fields.
- *Navigation by topic* – TNW's new TOPIC INDEX helps you to find your way quickly from a subject heading or an alternative sought term to the right place in the main sequence.
- *New resource categorization* – TNW has replaced the 40 or so 'form headings' used in the old Walford with a new simpler set of 13 resource categories.
- *Expansion of resource types* – TNW includes the full spectrum of resources now available to the

internet user, with thousands of organizational websites and portals complementing its coverage of traditional reference tools.

- *Introductory essays* – TNW also helps the STM newcomer by offering fifteen short narrative introductions, highlighting key features of each subject part and subject grouping.
- *Improved visual layout* – TNW's new typographical design and use of the resource title as the lead term for each entry makes the volume easy to scan and quick to use.

## The new information universe

The world wide web has revolutionized the world of reference. The number of host computers accessible via the internet has grown at an astonishing rate over the last ten years. At the time of writing, the leading search engine, Google, provides access to more than eight billion web pages. The proportion of that total that might be considered as 'reference resources' is debatable, but it must run into millions.

The later editions of the old *Walford* naturally recognized the gathering momentum of electronic information services and included a separate Online and Database Services Index in each volume, which covered both standalone CD-ROM and networked online services. It is now evident that the defining development of the electronic era was not the shift from print to digital resources, but the move to a digital format that is also networked – via the internet and the web. Five aspects of this revolution are significant for reference services.

1 *Networked versions of traditional reference resources*  
This area has evolved from the abstracting and indexing services offered by online hosts using proprietary search systems to electronic versions of other resources – such as data compilations, dictionaries, directories and encyclopedias – provided by aggregators with web-based interfaces. It also includes networked versions of library online public access catalogues (OPACs).

In STM it is now rare to find a print-based reference resource that does not also have a web-based presence. CD-ROM and (especially) microform versions have been virtually eclipsed by web-based products. Many libraries now subscribe only to the networked version, which provides comprehensive access to their primary user group, but may have unfortunate consequences for other users for whom access to resources is either restricted or denied.

2 *Network availability of digital primary resources*  
Following on from the networked versions of full-text secondary resources, such as encyclopedias, most of the primary journal literature in STM is now available

online, via an aggregator or direct from the publisher. Here again the trend is towards electronic-only access, controlled by licensing agreements which restrict access to members of the community, institution or corporation.

The *non-substitutability* of primary literature makes this a more serious concern than in the case of secondary resources, for which acceptable substitutes are often available. However, the 'open access movement' is starting to change this situation by encouraging scholarly authors to make their research papers and data publicly available through discipline-based or institutional repositories. This movement is now gaining high-level support within academic and official bodies, but it will take time for it to have full effect.

Web access is also being extended from 'born digital' to digitized 'legacy' artefacts, as a result of various local, national and international government-sponsored programmes. Such work encompasses a broad range of informational and other artefacts and the resulting resources frequently serve as an acceptable substitute for the 'real thing', which was formerly only accessible by visiting the relevant library, archive, museum, gallery, garden, laboratory, etc.

### 3 *Search engines, directories and resource discovery tools*

The creation of web search engines (such as Google) and research directories (such as Yahoo!) outside the traditional scholarly and scientific community is one of the most significant developments associated with the web. The success of such ventures is evident from the fact that large numbers of users – including students, academics and librarians – turn first to a tool like Google when seeking publicly available information.

Many other players have also tried to tame the web, producing both generic and domain-specific services, with the distinctions between 'engines', 'directories' and other tools becoming increasingly blurred. There have been numerous initiatives of this type in the academic world, with efforts at individual, institutional and national levels to develop 'subject gateways' and other resource discovery tools. These range from simple lists of web-page links to standardized descriptions of internet resources, but many of these services have proved unsustainable over time.

### 4 *Convergence and development of the information industry*

The new Google Scholar search engine and Google's digitization agreements with major research libraries are examples of the blurring of boundaries between the commercial and academic worlds. Within the information industry sector, established stakeholders are changing and expanding their roles and competing with new entrants to the field as other players develop their roles as information providers.

Traditional online hosts are now competing with booksellers, news agencies, broadcasting networks and software developers, as well as with subscription agents, document supply centres, information brokers and digital reference services. Many public sector and other non-profit organizations are also taking on significant roles as information providers through their websites. Linking technologies and partnerships enable users to move seamlessly from one resource to another, while portal and task environments offer a range of personalized services and facilities for online transactions.

5 *Dynamic resources and collaborative content creation*  
Current awareness services have similarly been transformed by new technologies, which offer the STM information user various options for keeping up-to-date with literature and developments in the field. Automatic e-mail alerting of journal content pages is well established and has now been supplemented by the use of RSS feeds for new web-page content from organizational and personal websites, including feeds from specialist weblogs.

Dynamic resources are becoming the norm, with content continually updated as new information enters the public domain. People are moving beyond e-mail discussion lists to new forms of online communities, using technologies such as chat rooms, instant messaging and wiki software, which allows open access for users to create and edit content on the web. The classic example here is the Wikipedia, described as 'the free-content encyclopedia that anyone can edit'.

TNW helps you to negotiate the challenges of this new world in several ways:

- by identifying specific items on topics likely to be of interest
- by showing how the different subjects relate to each other
- by covering the full spectrum of print and digital resources
- by offering a pragmatic framework to structure your search.

## **Selection and description of resources**

### *Selection policy*

In line with our aim of helping the newcomer, we have concentrated our selection of resources on items suitable for entry to the field. These items are typically at the tertiary education level and are the kinds of resources likely to be found and used in academic and large public libraries.

The resources included aim to give international coverage, especially for organizations. The publications listed are predominantly from the UK and US and primarily in the English language, which reflects the nature of STM publishing activity.

Our policy is to include only those resources likely

to be maintained in the medium to long term. We have generally excluded personally maintained websites, but where such resources have been included, we have marked them as ‘personal interest sites’ in the annotation.

#### *Resource descriptions*

We have based our description of resources on the current edition of the Anglo American Cataloguing Rules. To aid the rapid scanning of entries, we have made the title the lead element for all descriptions.

Where an item has a particular area focus that is not obvious from its title, we have added a two- or three-letter Geographical Indicator. The codes cover Europe, the G8 countries, Australia and China, which are the leading producers of scientific papers.

Where possible, we have given indicative prices for resources, generally in the currency of the country where the publisher has its headquarters.

For practical reasons, we have often shortened URLs, which should reduce the impact of changed locators and broken links. This may require you to navigate to the specific item listed, but may also reveal additional items of interest in the process.

#### *Resource annotations*

Our annotations are intended to help you decide whether a particular resource will meet your needs. We have concentrated on providing factual information about the content and scope of resources and on highlighting any notable or unusual features. If there is a good description of the resource available from its producer, we have incorporated that in the annotation, enclosing it in single quotation marks (‘...’).

We have tried to make the book interesting to read by varying the style of annotation and allowing the editors to choose their own approach. The provision of in-depth reviews is beyond our scope, but we often quote from such reviews, where they usefully reinforce or extend our comments. If we mention the relationship of a resource to another resource which is included in the volume, its title is shown in SMALL CAPITALS.

#### *Associated resources*

For around a quarter of the main entries, we have appended related or associated resources, which have full descriptions and index entries, but usually shorter annotations. This practice has enabled us to include a larger number of resources in the volume than would otherwise have been possible. Examples of resources of this kind include:

- subsidiary organizations or units of an organization
- advocacy bodies associated with an organization’s work

- additional resources produced by the same organization
- similar resources produced by another organization
- resources offering alternative treatments of a subject.

## **Organization and arrangement of entries**

### *Subject parts*

TNW Volume 1 is organized into three main Subject Parts matching the three parts of its title – Science, Technology and Medicine.

### *Generic resources*

There is also a large section at the start of the sequence devoted to Generic Resources in STM.

### *Tools for information professionals*

This is complemented by a smaller section at the end of the sequence devoted to Tools for Information Professionals, which covers both STM and generic resources in library and information science.

### *Subject groupings*

The subject parts are organized into twelve Subject Groupings reflecting their main divisions:

#### Science

- Mathematics
- Physics & Astronomy
- Earth Sciences
- Chemistry
- Biological Sciences
- Agriculture, Forestry, Fisheries & Food

#### Medicine

- Pre-clinical Sciences
- Clinical Medicine
- Health

#### Technology

- Natural Resources & Energy
- Engineering
- Information & Communication Technology

### *Subject fields*

The subject groupings are in turn organized into more than one hundred Subject Fields. The full list of subject fields is shown on the Contents page.

There are entries for resources at each level of this subject hierarchy, i.e.

- Subject part (e.g. Medicine)
- Subject grouping (e.g. Health)
- Subject field (e.g. Environmental & Occupational Health)

The distribution of resources over the different levels of the hierarchy varies from subject to subject,

reflecting the nature of the discipline and the judgement of the editors on the most useful balance.

*Cross references*

In order to maximize the number of resources included we have not duplicated resources between sections, but we have provided numerous cross-references for resources that are relevant to more than one subject field or grouping.

*Introductory essays*

Each subject part and each subject grouping is introduced by a short essay highlighting key points about the areas covered, including connections with other subjects in the volume.

*Resource categories*

All the resources listed in the different sections of the volume have been assigned to one of thirteen Resource Categories, which are shown in Figure 1

and listed below, with examples of the types included. These new categories replace the 'form headings' used in the old *Walford*. A table available at [www.facetpublishing.co.uk/newwalford/index.shtml](http://www.facetpublishing.co.uk/newwalford/index.shtml) shows how the old form headings relate to these new categories.

Within each section, part, grouping or field, the categories are always arranged in the same order:

- [1] Introductions to the subject.  
Includes histories of the subject, academic course books, non-specialist overviews, alternative viewpoints.
- [2] Dictionaries, thesauri, classifications  
Includes abbreviations and acronyms, glossaries, quotations, taxonomies and ontologies.
- [3] Laws, standards, codes  
Includes intellectual property, patents and trademarks, regulations, nomenclatures, scientific laws and theories.

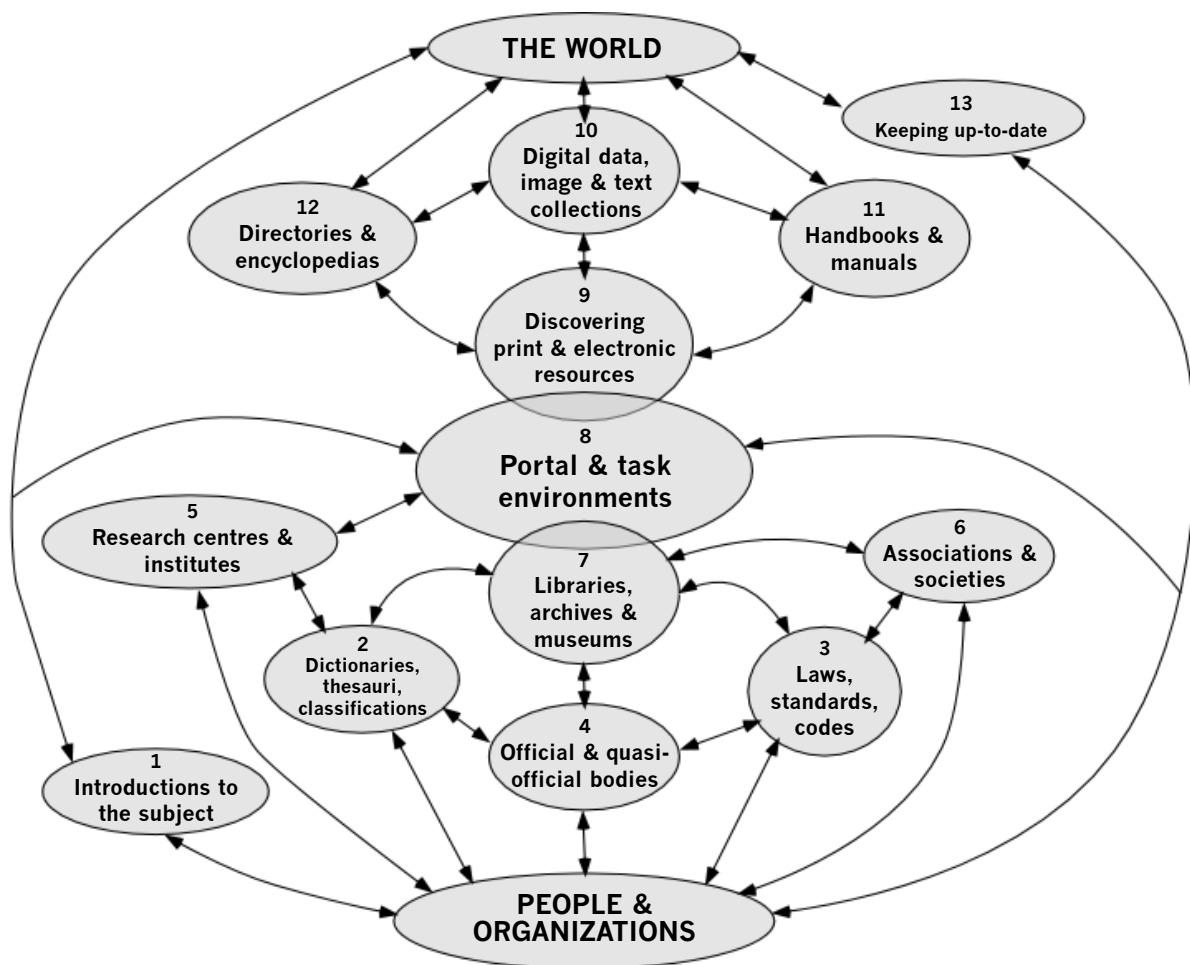


Figure 1 The Information Universe

- [4] Official & quasi-official bodies  
Includes government departments, international agencies, quasi-official government organizations, research councils.
- [5] Research centres & institutes  
Includes international centres of excellence, academic institutes, research foundations, commercially endowed non-profits.
- [6] Associations & societies  
Includes academies, scholarly societies, trade associations, advocacy and support bodies.
- [7] Libraries, archives & museums  
Includes national libraries, national archives, science museums, special collections.
- [8] Portal & task environments  
Includes aggregator/host services, e-type offerings (e-government, e-learning, e-science, etc), one-stop shops, virtual reference services.
- [9] Discovering print & electronic resources  
Includes abstracts and indexes, catalogues and bibliographies, finding tools, resource discovery services.
- [10] Digital data, image & text collections  
Includes science data banks, photograph sets, primary journal and book collections, statistical series.
- [11] Directories & encyclopedias  
Includes biographies, almanacs, chronologies, maps and gazetteers.
- [12] Handbooks & manuals  
Includes advanced textbooks, edited collections, field guides, technical compendia.
- [13] Keeping up-to-date  
Includes annual reviews, professional and trade magazines, current awareness services, discussion groups.

The categories are not mutually exclusive, so where a resource could be placed in more than one category, we have usually assigned it to the category that comes first in the sequence. The distribution of resources across the different categories naturally varies from subject to subject.

## Indexes

The volume concludes with two indexes, offering access to the main sequence of entries by topic, resource title or author.

### *Topic Index*

The Topic Index lists in a single alphabetical sequence all the terms used as subject headings for the subject groupings and subject fields, together with alternative terms for those headings as well as terms at a more detailed level than the subject fields. This index shows you where commonly sought terms are located in our subject structure and also helps you to navigate quickly to the right part of the main sequence.

### *Title/Author Index*

The Title/Author Index lists the authors and titles for all resources listed, covering both main entries and associated resources. For organizations, it includes cross-references for commonly-used abbreviations and acronyms, in addition to cross-references linking parent and subordinate bodies. This index enables you to locate resource descriptions quickly when you already know the title or author.

## Disclaimer

The inclusion of a resource in TNW in no way implies the publisher's and Editor's endorsement of the views contained within it.



# **SCIENCE, TECHNOLOGY & MEDICINE**



# Science, Technology & Medicine

This volume contains two collections of descriptions of generic resources. This section includes those likely to be used by researchers and practitioners within science, technology and medicine (STM); the final section within the book contains a selection of resources aimed more at the information professional. In both cases we have included many items that cover a wider subject canvas than just STM – and thus these will be of relevance also to the subject foci of the other two volumes of *The New Walford (TNW)* planned to follow this volume: Volume 2: *The Social Sciences*; Volume 3: *Arts, Humanities & General Reference*.

When using the later sections of this volume covering the individual subject fields, readers should always remember that there might well be an alternative good (or even better) resource listed within the field's relevant subject grouping; similarly regarding a subject grouping vis-à-vis its subject part; a subject part compared with this section. This is an obvious point, but one sometimes overlooked and these days given added force by the continuing consolidation within the industry towards just a small number of players offering integrated resources with very wide subject coverage.

## Introductions to the subject

### 1 Information: the new language of science

**H.C. Von Baeyer** Weidenfeld & Nicolson, 2004, 192pp. Originally published 2003, £7.99. ISBN 0753817829.

'Today we live in the information age. Wherever we look it surrounds us, and with the help of ever more efficient devices, from the internet through to mobile phones, we are producing, exchanging and harnessing more than ever before. But information does far more than define our modern age – at a fundamental level it defines the material world itself, for it is through its mediating role that we gain all our knowledge, and everything derives its function, existence and meaning from it.

In twenty-five short chapters, von Baeyer takes us from the birth of the concept of information and its basic language, the bit, through to the coal-face of contemporary physics and beyond relativity; black holes; randomness; abstraction – explaining why it has the power to become the most fundamental concept in physics – as fundamental as mass and energy.'

'A sense of wonder is an essential prerequisite to an appreciation of the discoveries of science, and wonderment is the emotion that will be most pleasantly evoked in the reader of this book.'  
(*Times Higher Education Supplement*)

### 2 The Oxford companion to the history of modern science

**J.L. Heilbron [et al.], eds** Oxford University Press, 2003, 941pp. £67.00. ISBN 0195112296.

Outstanding introduction – not just to 'science', but also to large parts of 'technology' and 'medicine'. Perhaps most useful for those new to this arena are the entries relating to 'The Body of Knowledge': Epistemology and methodology; Cross-cutting concepts; Major subject divisions; Minor subject divisions; Theoretical constructs – with each article written in an approachable manner, stressing naturally the history, and appended with a short bibliography. Supplementing these entries for the 'basic' sciences are the ones for the 'applied' sciences.

But there are also considerable numbers of discussions relating to the historiography of science, the organization

and diffusion of science, the apparatus and instruments it uses, as well as about 100 biographies of key current and past scientists.

Finally, there is a good Further Reading section, and a comprehensive Index.

### 3 The science wars: debating scientific knowledge and technology

**K. Parsons, ed.** Prometheus Books, 2003, 300pp. \$21.00. ISBN 1573929948.

'Is science our most precious possession or has our culture elevated science into a false idol? Is technology a useful servant or a malign genie? These questions are at the center of the 'science wars' currently being waged over the role and future of science and technology in our society.' Good introductory anthology.

*Series: Contemporary Issues.*

### 4 Servants of nature: a history of scientific institutions, enterprises and sensibilities

**L. Pyenson and S. Sheets-Pyenson** HarperCollins, 1999, 496pp. £24.99. ISBN 000223842X.

'Tracing the establishment of institutions of higher learning, scientific societies and museums, the authors examine how the bodies that shape scientific tradition and guide innovation have acquired their authority. They proceed to consider how scientific goals have changed, as they analyze the relationship between scientists, militarists, and industrialists in modern times.'

### 5 A short history of nearly everything

**B. Bryson** Black Swan, 2004, 687pp. Originally published in Great Britain by Doubleday, 2003, £8.99. ISBN 0552997048.

The most enjoyable, well written, and informative introduction to science of recent times. A remarkable book.

### 6 Sync: the emerging science of spontaneous order

**S. Strogatz** Penguin, 2004, 352pp. £8.99. ISBN 014100763X.  
An elegant, wide ranging layman's introduction to the study of synchrony: 'order in time' – where the same things happen at the same time, persistently, often with no obvious reason. Suggests that – following the fashions of cybernetics

(60s), catastrophe theory (70s), chaos theory (80s), complexity theory (90s), that – in this decade – it will be different: ‘Even the most hard-boiled, mainstream scientists are beginning to acknowledge that reductionism may not be powerful enough to solve all the great mysteries we’re facing.’

## 7 A terrible beauty: the people and ideas that shaped the modern mind: a history

**P. Watson** Phoenix Press, 2001, 847pp. Originally published by Weidenfeld & Nicolson, 2000, £16.99. ISBN 1842124447.

A masterly survey, with especial emphasis on the development and role of science in the 20th century. Excellent contextual explanations for the layman of critical advances, revolving around reviews of the lives of key figures. Two good indexes: Names, People, and Places; Ideas and Subjects. 3000 Notes and References plus a useful list in the Preface of the books ‘whose pages I have pillaged, précised and paraphrased shamelessly’.

‘Understanding this narrative, and the way that it was arrived at, involves a good appreciation of all the important sciences, the significant phases of history, the rise and fall of civilisations, and the reasons for the underlying patterns ... The evidence, at the end of the century, suggests that we are already living in what may be called a crossover culture. While people lament the effects of the mass media on our intellectual life generally, an inspection of the shelves in any good bookshop more or less anywhere in the Western world shows that, on the other hand, one of the greatest growth areas is in what is called popular science.’

‘That phrase is in fact misleading, to the extent that many of these books are relatively difficult, examining for example the nature of matter, abstruse mathematics (Fermat’s last theorem, longitude), the minutiae of evolution, the byways of palaeontology, the origin of time, the philosophy of science. But a growing number of people now accepts that one cannot call oneself educated unless one is up-to-date on these issues ...’

*‘All changed, changed utterly:*

*A terrible beauty is born.’* W.B. Yeats

Dictionaries, thesauri, classifications

## 8 Academic Press dictionary of science and technology

**C. Morris, ed.** Academic Press, 1992, 2432pp. CD-ROM available, £67.99. ISBN 0122004000.

‘Approximately 124,000 fully defined entries, not counting abbreviations – the largest range of vocabulary ever compiled in a science dictionary. Complete coverage of 124 fields of science and technology, including Computer science, Biotechnology, Engineering, Physics, Mathematics, Molecular biology, Ecology, Behaviour, Astronomy, Geology, and more.’

## 9 Acronyms, initialisms and abbreviations dictionary

Thomson Gale, Annual. \$895.00 [Edition 34, 2004]. ISBN 078766667X.

[www.gale.com/gvrl](http://www.gale.com/gvrl)

‘Here’s a dictionary that will make you an expert on modern communications. Definitions of a wide variety of acronyms, initialisms, abbreviations and similar contractions enable you to quickly and easily translate terms into their full names or meanings. New terms from subject areas such as associations, education, the Internet, medicine and others

are now included. Also a supplement including both by acronym and by meaning sections is included.’

Available online: see website.

## ■ Reverse acronyms, initialisms and abbreviations

**dictionary** Annual. \$595.00 [Edition 34, 2004]. ISBN 078767348X. This volume provides the same data in reverse to enable users to look up the full abbreviation and retrieve the abbreviated form.

## 10 Callaham’s Russian-English dictionary of science and technology

**L.I. Callaham, P.E. Newman and J.R. Callaham** 4th edn, Wiley, 1996, 848pp. \$199.95. ISBN 0471611395.

Contains over 120,000 terms including some common non-technical terms. Entries give the field of use and a translation.

## 11 Chambers dictionary of science and technology

**P.M.B. Walker** Chambers, 1999, 1344pp. £20.00. ISBN 0550130020.

Contains short entries for words and expressions in science, technology, mineralogy, geology, computing and electronics. Full page panels for 100 entries give fuller explanations. Appendices include paper sizes, animal and plant classifications, amino acids, astronomical data, etc. 500 illustrations.

## 12 Comprehensive Russian English polytechnic dictionary (Bolshoi russko-angliiskii politechnicheskii slovar)

**D.A. Russak and A.Yu. Ovsinskiy** ETS, 1998, 2988pp. 4 v, \$178.00. ISBN 5864550515.

[www.ets.ru](http://www.ets.ru) [DESCRIPTION]

Claims to be the first ever dictionary of its type published in Russia. Covers 500,000 scientific and technological terms.

See website for description also of electronic version of the dictionary.

## 13 A dictionary of the European Union

**D. Phinnemore and L. McGowan** 2nd edn, Europa, 2004, 419pp. £120.00. ISBN 1857432606.

Concise definitions and explanations on all aspects of the European Union, including details of the ten states which became full members of the EU in May 2004. 1000 entries.

## 14 Elsevier’s dictionary of technical abbreviations: English–Russian

**M. Rosenberg and S. Bobryakov** Elsevier, 2005, 1184pp. £130.00. ISBN 0444515615.

[www1.elsevier.com/homepage/sae/dictionaries/start.htm](http://www1.elsevier.com/homepage/sae/dictionaries/start.htm)

65,000 entries listed as covering, for instance, space, agriculture, electronics, computer science, chemistry, thermodynamics, nuclear engineering, refrigeration, cryogenics, machinery, aviation, business, accounting, optics, radio electronics, military fields, etc.

Website is an easy to use gateway to details of approximately 200 Elsevier titles in print and in preparation – the majority of which cover areas of science, technology and medicine, and a number of which are referenced elsewhere in TNW. Browse through the detailed keyword index (but connection can sometimes be slow).

## 15 EuroDicAutom

<http://europa.eu.int/eurodicautom/Controller>

The European Commission’s multilingual term bank, pleasant to use, but stated late 2004 soon to be ‘integrated into a new interinstitutional terminology database, which will incorporate the contents of the databases already existing in

the various institutions and bodies of the European Union. The aim of this project is to meet the challenge of the forthcoming enlargement, which will extend the problems associated with terminological data to some twenty languages. The result will reflect Europe's linguistic diversity and richness. We will be examining the question of access to the new base keeping in mind the need for sound management of public funds'.

Currently records a daily average of 120,000 enquiries; and is 'particularly rich in technical and specialised terminology (agriculture, telecommunications, transport, legislation, finance) related to EU policy'.

'Entries are classified into 48 subject fields (ranging from medicine to public administration). A typical entry contains the term itself and its synonyms, together with definitions, explanatory notes, references, etc. At present the term bank contains about five and a half million entries (terms and abbreviations), subdivided into more than 800 collections.'

## 16 German–English Dictionary Technische Universität Chemnitz

<http://dict.tu-chemnitz.de>

A simple – but powerful – German/English dictionary based on a wordlist containing over 179,000 entries. A nice feature is the series of Word Lists listing translated terms for: Occupations/professions/jobs; States/countries; Trees; Flowers; Animals; Tools; Natural disasters; Chemical elements; etc. There is also a Conversion of Units function.

## 17 Illustrated scientific dictionaries

Enchanted Learning.

[www.allaboutspace.com/science/dictionary](http://www.allaboutspace.com/science/dictionary)

Enjoyable engaging set of dictionaries designed for young people. Small annual subscription gives access to the whole of the site.

## 18 International encyclopedia of abbreviations and acronyms in science and technology

**M. Peschke** K.G. Saur, 1995–2000. 17 v, €2600.00. ISBN 3598229704.

680,000 entries in eight volumes covering the most important acronyms from diverse science fields. Also includes common vernacular abbreviations. There are two supplementary volumes containing an additional 170,000 entries. Covers organizations, journals, projects, systems, terms, etc. The remaining seven volumes are a reversed edition giving an alphabetical list of full names with their abbreviations.

## 19 Longman glossary of scientific and technical terms: English-Chinese

**C. Lassure, comp.** People's University of China Beijing, 2000, 1475pp. ISBN 7300034241.

[www.chinabooks.com.au/language/Indictst\\_2.htm](http://www.chinabooks.com.au/language/Indictst_2.htm)

'Contains 50,000 entries on fifty educational subjects, including biology, chemistry, physics, medicine, computer science, electronics, etc. A large number of new words and phrases, such as El Niño, avian flu, website, etc., are included.'

See (Australian) website for descriptions of other Chinese STM dictionaries.

## 20 McGraw-Hill dictionary of scientific and technical terms

6th edn, McGraw-Hill, 2003, 2380pp. \$150.00. ISBN 007042313X.

Aimed at both scientist and general reader. 110,000 terms

and 125,000 short definitions; 3000 illustrations. Each definition identified by field of use e.g. physics, engineering, acoustics, organic chemistry. Appendices include units, symbols, periodic table, mathematical notation, fundamental constants, particles, geological time scale and classification of organisms.

Various sub-sets of the dictionary are available, several referenced elsewhere.

## 21 North American Industry Classification System: NAICS

**Bureau of the Census** 2002.

[www.census.gov/epcd/www/naics.html](http://www.census.gov/epcd/www/naics.html)

Replacement for the US Standard Industrial Classification System (SIC). 'NAICS will reshape the way we view our economy.' There is a select list of new US industries being identified in NAICS (e.g. Cellular and other wireless communications; Hazardous waste collection; HMO medical centers; Diet and weight reducing centers) – with the economy now being grouped into 20 broad sectors, up from the 10 divisions of the SIC system. Of particular interest here is the new Information section which 'includes major components from Transportation, Communications, and Utilities (broadcasting and telecommunications), Manufacturing (publishing), and Services Industries (software publishing, data processing, information services, motion picture and sound recording)'.

■ **North American Industry Classification System** Bernan Press, 2002, 1424pp. \$45.00. ISBN 0890595666.

[www.bernan.com/General/About\\_Bernan.aspx](http://www.bernan.com/General/About_Bernan.aspx) [DESCRIPTION]. As well as publishing NAICS, Bernan is a leading distributor of a wide range of publications from the United States government and intergovernmental organizations, including many other classification schemes.

## 22 OneLook dictionary search

Datamuse.

[www.onelook.com](http://www.onelook.com)

A delightful service to use. A search for 'bilirubin' retrieved entries in 15 'General' dictionaries, 13 'Medicine' dictionaries, and 2 'Science' dictionaries; on 'nanotechnology', entries in 11 'General', 1 'Business', 6 'Computing' and 3 'Science' dictionaries; on 'genetic engineering', 18 'General', 1 'Art', 1 'Business', 3 'Medicine', 11 'Science', and 2 'Tech'. As of early 2005, more than 6 million words in 993 dictionaries were indexed. There is a list of the dictionaries with descriptive information about each. In addition: 'There are no pop-up advertisements on OneLook.com. We do not allow pop-up ads of any kind on this site and strongly object to them.' There is (thus) some sponsorship; but it is not intrusive.

## 23 Routledge French technical dictionary: French-English (Dictionnaire technique anglais: anglais-français)

Routledge, 1994. 2 v., £260.00. ISBN 0415056705.

Highly acclaimed set consists of some 100,000 keywords in both French and English, drawn from the whole range of modern applied science and technical terminology. Covers over 70 subject areas, from engineering and chemistry to packaging, transportation, data processing and much more.

## 24 Science and technology encyclopedia

University of Chicago Press (Distributed for the Octopus Publishing Group), 2000, 576pp. \$22.50. ISBN 0226742679.

[www.press.uchicago.edu](http://www.press.uchicago.edu) [DESCRIPTION]

'Up-to-date, concise, and easy to use, the *Science and Technology Encyclopedia* is a reliable resource for a wide general readership – from high school students to undergraduates to all those with an interest in the comprehensive array of scientific fields it covers.

It includes: more than 6500 authoritative A–Z entries covering earth and life sciences (including natural history, physics, chemistry, medicine, information technology, and other disciplines; biographical entries for more than 850 famous scientists, detailing their careers and achievements; over 20,000 cross-references; more than 250 detailed illustrations, including schematic diagrams, representational natural history artwork, and technical cutaway diagrams.' 'Overall, I find the University of Chicago *Science and Technology Encyclopedia* to be a worthwhile addition for any general academic or science and technology library. I have no qualms recommending this book – the price is reasonable, the content coverage is pretty good for a book of this size, the publisher is reputable, and the illustrations are very well done. I just wish they called it a dictionary.' (*Issues in Science and Technology Librarianship*)

## 25 Scientific and technical acronyms, symbols, and abbreviations

**U. Erb and H. Keller** Wiley, 2001, 2114pp. \$262.00. ISBN 0471388025.

[www3.interscience.wiley.com/stasa](http://www3.interscience.wiley.com/stasa)

Contains 200,000 entries covering science, technology, medicine, including architecture, construction, geography, housing, nursing. Covers organizations, journals, projects, systems, etc. Gives the country of use, where appropriate. Appendices list units of measurement, mathematical and electrical symbols, chemical tables, ASCII codes, etc.

Available online: see website.

## 26 UNBIS Thesaurus United Nations

<http://unhq-appspub-01.un.org/LIB/DHLUNBISThesaurus.nsf>

Online version of the 4th edn in all the UN's official languages: Arabic, Chinese, English, French, Russian, Spanish. 'It is multidisciplinary in scope, reflecting the Organization's wide-ranging concerns. The terms included are meant to reflect accurately, clearly, concisely and with a sufficient degree of specificity, matters of importance and interest to the United Nations.' Part of the United Nations Bibliographic Information System from the Dag Hammarskjöld Library.

## 27 Wörterbuch der exacten Naturwissenschaften und der Technik

**A. Kucera** 2nd edn, Oscar Brandstetter, 2002, 1460pp. Band II Deutsche-Englisch, €165.00. ISBN 3870971509.

The German-English volume contains about 220,000 entries covering 103 subject fields. Parts of speech are given for German and English words.

'This is a Rolls-Royce among polytechnical dictionaries' (*The Linguist*)

■ **Wörterbuch der industriellen Technik R. Ernst, comp.** Oscar Brandstetter, 1984–2004. [www.brandstetter-verlag.de/p16.html](http://www.brandstetter-verlag.de/p16.html) [DESCRIPTION]. Classic series of translating dictionaries between German and English, French, Spanish, and Portuguese, plus between French and English.

Laws, standards, codes

## 28 American National Standards Institute

[www.ansi.org](http://www.ansi.org)

Private, non-profit organization (501(c)3) that 'administers and coordinates the US voluntary standardization and conformity assessment system': founded in 1918 by five engineering societies and three government agencies. Wide range of information on standards activities, news, education and training, meetings and events. The eStandards Store is a catalogue that includes ANSI and foreign standards and which can be searched by keyword or publication number. Standards can be purchased online and other documents (some of which are available only to members) downloaded. There is a very useful *Internet Resources Overview*: 'a compilation of electronic assets and research materials available on the World Wide Web. The scope of this collection is research-oriented, and provides access to the websites of other organizations with missions of interest to the standardization and conformity assessment community.'

## 29 Association Française de Normalisation

[www.afnor.fr/portail.asp?Lang=English](http://www.afnor.fr/portail.asp?Lang=English)

The French standardization body. Includes a searchable catalogue in French and English.

## 30 British Standards Institution

[www.bsi-global.com](http://www.bsi-global.com)

Organized into 5 'businesses': British Standards – the national standards body of the UK; BSI Management Systems – providing organizations with independent third party certification of their management systems, including ISO 9001:2000 (Quality), ISO 14001 (Environmental Management), OHSAS 18001 (Occupational Health and Safety) and BS 7799 (Information Security). In 2002 BSI 'purchased the North American Systems Assessment business of KPMG making BSI the largest management systems certification company in North America'; and in 2003 they became a major player in the Greater China certification market; BSI Business Information – adding value to business operations; BSI Product Services – helping industry develop new and better products and to make sure that products meet current and future laws and regulations; BSI Inspectorate – operating in Metals and Minerals, Oil and Petrochemicals and Agricultural Commodities, and having facilities in 110 countries, including 74 dedicated laboratories.

The website has an area Information for Students, including sections on environment, IT, and quality, as well as on information for teachers and lecturers and on access to standards. British Standards Online, updated daily, provides access to over 38,500 current, draft and historic British Standards – more than 16,000 of which are BSI adopted European and International standards, as well as to technical handbooks, codes of practice, guidelines, specifications, and glossaries. Registering gives FREE access to detailed bibliographic information and enables hardcopy ordering. Subscribers get instant unlimited online access to complete standards. The Library of Resources contains the helpful Directors' Briefings series of 164 four-page datasheets which provide clear, concise advice on various business issues: particularly use of IT.

**31 Canadian Standards Association**

[www.csa-intl.org/onlinestore](http://www.csa-intl.org/onlinestore)

'Not-for-profit membership-based association serving business, industry, government and consumers in Canada and the global marketplace.' The Site has a Consumers area including sections on, for instance: 'Why Standards Matter' and 'Who's Who Behind the Marks'; and their Info Update – published 8 times/year – gives important information about new and existing standards, and standards under development, as well as highlights of other activities and services. It is organized into 8 Program Areas: Communications/Information; Construction Products and Materials; Electrical/Electronics; Energy; Environment; Gas Equipment; Life Sciences; Quality/Business Management.

**32 Deutsches Institut für Normung**

[www2.din.de/index.php?lang=en](http://www2.din.de/index.php?lang=en)

The German Institute for Standardization. The easy-to-use site lists English language translations of DIN standards and publications. The DiTR National and International Standards database contains references to British, US, German, Austrian, Swiss, French, Japanese and international standards and technical regulations.

DIN standards are a widely used European set of codes in engineering, with DIN's publishing arm, Beuth, producing a series of DIN handbooks bringing together basic standards in key areas.

■ **Beuth** [www.beuth.de/index\\_en.php](http://www.beuth.de/index_en.php). DIN subsidiary. One of the largest German publishing houses, differing from other such publishing houses in that the surplus income it earns is used to finance the standards work undertaken by DIN. Databases; handbooks; software; online services.

**33 Electronic Information System for International Law: EISIL**

**American Society of International Law**

[www.eisil.org](http://www.eisil.org)

'Designed as an open database of authenticated primary and other materials across the breadth of international law, which until now have been scattered in libraries, archives and specialized web sites ... EISIL offers the international law expert the depth of resources for sophisticated legal research. At the same time, EISIL can provide the novice researcher with the information needed to undertake a successful search.'

Categories include: International Organizations (e.g. United Nations; European Union); International air, space and water; International environmental law; International human rights (including: Women's human rights; Education; Health and human rights; Freedom of information and right to culture); Communications and transport.

■ **EUR-Lex: The access to European Union law**

<http://europa.eu.int/eur-lex/lex/en/index.htm>. Free access, daily updates. Now provides 1,400,000 documents in a number of languages. Good searching facility either via classification scheme or keyword (*EUROVOC*).

■ **LawLinks: Legal information on the internet S. Carter, comp.; University of Kent at Canterbury**

<http://library.kent.ac.uk/library/lawlinks>. Valuable portal to UK and international resources. 'Special legal topics' include: Environmental law; Information technology; Maritime law; Medical and mental health. Extensive entrée to European Union information.

■ **Parry & Grant encyclopaedic dictionary of**

**international law J.C. Barker and J.P. Grant, eds** 2nd edn, Oceana Publications, 2003, 641pp. \$155.00. ISBN 0379214490.

[www.oceanalaw.com](http://www.oceanalaw.com) [DESCRIPTION]. 'Since 1948 Oceana has been the premier publisher of essential international legal information specifically

designed for law librarians, practicing attorneys, business executives, academicians, and researchers worldwide'.

**34 Ente Nazionale Italiano di Unificazione**

[www.uni.com/it](http://www.uni.com/it)

Italian official standards body; English language version of website 'under construction ... At present the only section available in English is the Catalogue online for UNI standards'.

**35 EuroAsian Interstate Council: for Standardization, Metrology and Certification [RUS]**

[www.easc.org.by/english/english.php3](http://www.easc.org.by/english/english.php3)

Easy to use, well designed site. 'The Interstate Council was created in accordance with the 'Agreement on realization of coherent policy in the field of standardization, metrology and certification of the 13 of March 1992 '... to coordinate the works in the field of standardization, metrology and certification and to define the main directions of the interstate standardization, metrology, certification and accreditation in stated fields of activities.' Represents Russia and the other 11 Interstate Council States on the quasi-official international bodies.

**36 European Committee for Standardization**

[www.cenorm.be](http://www.cenorm.be)

'Contributes to the objectives of the European Union and European Economic Area with voluntary technical standards which promote free trade, the safety of workers and consumers, interoperability of networks, environmental protection, exploitation of research and development programmes, and public procurement.'

A March 2004 downloadable PDF CEN Compass – European standardization in a nutshell gives a good overview of their work – including listing the various CEN sectors (Chemistry; Building and civil engineering; Food; Information society; etc.). The Committee works in parallel with the INTERNATIONAL ORGANIZATION FOR STANDARDIZATION with more than 30% of the standards adopted being identical to ISO standards, and many more closely related.

There is also a good FAQ section answering questions, for instance, about CE marking and certification.

■ **European Organisation for Conformity Assessment**

[www.eotc.be](http://www.eotc.be). Provides a range of services including registration of mutual recognition agreements, and the provision of information, advisory, educational and training services, thereby to facilitate free trade and to spread knowledge relating to Conformity Assessment.

**37 International Organization for Standardization**

[www.iso.org](http://www.iso.org)

Network of the national standards institutes of 148 countries, on the basis of one member per country, with a Central Secretariat in Geneva, Switzerland, that co-ordinates the system. 'ISO standards are voluntary. As a non-governmental organization, ISO has no legal authority to enforce their implementation. A certain percentage of ISO standards – mainly those concerned with health, safety or the environment – has been adopted in some countries as part of their regulatory framework. (and) they may become a market requirement, as has happened in the case of ISO 9000 quality management systems, or of dimensions of freight containers and bank cards.'

Orders for ISO Standards and ISO publications should normally be addressed to the ISO member in your country (listed on the website); but shopping is also possible from

the ISO Central Secretariat. The ISO Catalogue contains a complete listing of published standards, classified by subject.

The website specifically features the ISO 9000 (Quality Management) and ISO 14000 (Environmental Management) families of standards.

■ **International Classification for Standards**

[www.iso.org/iso/en/catsupport/howcat.html](http://www.iso.org/iso/en/catsupport/howcat.html). The classification used to organize the standards on the ISO site; the URL leads to a guide to the use of their catalogue, from which there is a link to the classification itself, and then via the fields, groups and subgroups to the standards of interest.

**38 Japanese Industrial Standards Committee**

[www.jisc.go.jp/eng/index.html](http://www.jisc.go.jp/eng/index.html)

Central co-ordinating body for Japanese standards activity; represents Japan on international committees. Clearly labelled site; easy to navigate. All newly established and revised standards are published by the Japanese Standards Association: [www.jsa.or.jp/default\\_english.asp](http://www.jsa.or.jp/default_english.asp)

**39 NSSN: a national resource for global standards**

[www.nssn.org](http://www.nssn.org)

Aims to become a leader in the provision of technical data and information about important developments in the global standardization arena. Their database now contains over 250,000 references to standards from more than 600 national, foreign, regional and international bodies. If a document is available electronically the user is seamlessly transferred to the shopping cart of the standards developer or designated information reseller. If a document is not available electronically then information is provided about how to obtain a hard-copy version of the text.

■ **Standards Tracking and Automated Reporting Service**

\$99.00 [Annual]. Identifies new project proposals and automatically tracks changes in status of a development project or standard under maintenance. Covers more than 270,000 standards under development, revision and maintenance.

**40 Science and Technology Law [USA]**

**American Bar Association**

[www.abanet.org/scitech/home.html](http://www.abanet.org/scitech/home.html)

Section of the American Bar Association. 'Provides a forum for members to explore new and emerging topics such as electronic commerce and digital signatures, the scope of electronic notarial practice, online payment mechanisms such as smart cards and digital cash, scientific misconduct, law and the Internet, multimedia and interactive technology, information security and privacy, telecommunications law, biotechnology, scientific evidence and genetic engineering.'

Within the Section there are 4 Divisions (e-commerce; computer law; communications law; life and physical sciences), each of which has a number of component committees, plus Special Committees and Task Forces on: Opportunities For Minorities and Women; Dispute and Resolution; Nanotechnology; Scientific Evidence; Biometrics; the Health Insurance Portability and Accountability Act. E-mail contacts are given for most of these.

**41 Standardization Administration of China**

[www.sac.gov.cn/english/home.asp](http://www.sac.gov.cn/english/home.asp)

Established in April 2001 and authorized by the State Council 'to exercise the administrative functions and carry out centralized administration for standardization in China'. Represents China at the INTERNATIONAL ORGANIZATION FOR STANDARDIZATION, INTERNATIONAL ELECTROTECHNICAL COMMISSION

and other international and regional standardization organizations. The English-language *Bulletin of national standards*, accessible from the site, announces newly approved national standards in the People's Republic of China.

■ **China Association for Standardization** [www.china-cas.com/english/index.htm](http://www.china-cas.com/english/index.htm). From January 2004 have produced the bimonthly English language magazine *China Standardization*.

**42 Standards Australia**

[www.standards.org.au](http://www.standards.org.au)

'Established in 1922, Standards Australia is recognised through a Memorandum of Understanding with the Commonwealth Government as the peak non-government standards development body in Australia. It is a company limited by guarantee, with 72 Members representing groups with an interest in the development and application of standards and related products and services.' In 2003, the organization was restructured in recognition that 'the sale of standards and directly related documents has generated insufficient funds to operate a multidiscipline standards development body despite the tremendous and world leading marketing techniques developed within Standards Australia': interesting background in the first issue of *Consensus News*. PDF copies of their attractive and informative magazine *The Global Standard* (11 issues per year) can also be downloaded.

**43 Standards Council of Canada**

[www.scc.ca](http://www.scc.ca)

'Federal Crown corporation with the mandate to promote efficient and effective standardization.' The Council 'has the mandate to coordinate and oversee the efforts of the National Standards System, which includes organizations and individuals involved in voluntary standards development, promotion and implementation in Canada ... More than 15,000 Canadian members contribute to committees that develop national or international standards. As well, more than 400 organizations have been accredited by the Standards Council. Some of these develop standards, others are conformity assessment bodies which determine the compliance of products or services to a standard's requirements.'

**44 World Standards Service Network: WSSN**

[www.wssn.net](http://www.wssn.net)

Through the websites of its members, WSSN provides information on international, regional and national standardization and related activities and services.

Official & quasi-official bodies

**45 Bundesministerium für Bildung und Forschung**

[www.bmbf.de/en/index.php](http://www.bmbf.de/en/index.php)

'Increasing Germany's innovative power, creating secure jobs, enhancing the quality of education – these are the goals pursued by the Federal Ministry of Education and Research. We also support international cooperation in education, science, research and technology.'

■ **Deutsche Forschungsgemeinschaft** [www.dfg.de/en/index.html](http://www.dfg.de/en/index.html).

'Central, self-governing research organisation that promotes research at universities and other publicly financed research institutions in Germany ... serves all branches of science ... by funding research projects and facilitating cooperation.'

- 46 Canada Site**  
**Canada. Public Works and Government Services**  
[www.canada.gc.ca](http://www.canada.gc.ca)  
 The primary internet portal for information on the Government of Canada, its programs, services, new initiatives and products, and for information about Canada. Features three audience-based gateways respectively for: Canadians; Non-Canadians; Canadian Business. Accessing the first of these reveals a series of Topics, including: Environment, Natural Resources, Fisheries and Agriculture; Health; and Science and Technology. The last of these then divides into: Energy; Environment; Food; Health; Space. And so on. A clear well organized site.
- **Science and Technology for Canadians** [www.science.gc.ca](http://www.science.gc.ca). Targeted at the 'general public'. Major sections are: Energy; Environment; Food; Health; Security; Space.
- 47 Consiglio Nazionale delle Ricerche**  
[www.cnr.it/sitocnr/Englishversion/Englishversion.html](http://www.cnr.it/sitocnr/Englishversion/Englishversion.html)  
 The Italian National Research Council, whose 'primary function is to carry on, through its own organs, advanced basic and applied research, both to develop and maintain its own scientific competitiveness, and to be ready to effectively and timely take part in the strategic fields defined by the national planning system'.  
 English language website under development.
- 48 CORDIS: Community Research and Development Information Service** [EUR]  
[www.cordis.lu/en](http://www.cordis.lu/en)  
 The European 'Community Research and Development Information Service'. The major source of information on EU funded research programmes. Not the most pleasant of sites to use; but persistence reveals a wealth of information about STM activity within the Union. Those new to the site can start with the Section CORDIS Guidance. There is also an interactive Help Desk.
- **European Research Area** [www.cordis.lu/era](http://www.cordis.lu/era). The idea 'grew out of the realisation that research in Europe suffers from three weaknesses: insufficient funding, lack of an environment to stimulate research and exploit results, and the fragmented nature of activities and the dispersal of resources'.
  - **Sixth Framework Programme: FP6**  
<http://fp6.cordis.lu/fp6/home.cfm>. 'Whether you are a newcomer to EU-funded R&D programmes, or an experienced project participant, this service can direct you to all of your FP6 information and participation needs ...'
- 49 Council for Science and Technology** [UK]  
[www.cst.gov.uk](http://www.cst.gov.uk)  
 The UK government's advisory body on strategic science and technology policy issues, organizing its work around five broad themes: research, science and society, education, science and government, and technology innovation. The website contains its reports and information on related developments.
- 50 Department of Commerce** [USA]  
**United States. Department of Commerce**  
[www.commerce.gov](http://www.commerce.gov)  
 The Department's strategic goals for 2004–2009 are: Provide the information and tools to maximize US competitiveness and enable economic growth for American industries, workers, and consumers; Foster science and technological leadership by protecting intellectual property, enhancing technical standards, and advancing measurement science;
- Observe, protect, and manage the earth's resources to promote environmental stewardship; Management Integration Goal: Achieve organizational management excellence.
- 51 Department of the Interior** [USA]  
**United States. Department of the Interior**  
[www.doi.gov](http://www.doi.gov)  
 Bureaux managed by DOI include: NATIONAL PARK SERVICE; US FISH AND WILDLIFE SERVICE; OFFICE OF SURFACE MINING; MINERALS MANAGEMENT SERVICE; and US GEOLOGICAL SURVEY: Major current DOI Initiatives are: 'Improving Our National Parks'; 'Promoting Healthy Forests'; 'Protecting Endangered Species and Wildlife Habitat'; 'Promoting Responsible Energy Policy'.
- 52 Directgov** [UK]  
[www.direct.gov.uk](http://www.direct.gov.uk)  
 'The place to turn for the widest range of government information and services.'  
 Easy-to-use intuitive site providing a number of routes to relevant information. A good place to start is the section Browse government information by subject organized into 12 broad categories, including: Agriculture, environment and natural resources; Business and industry; Health, nutrition and care; Information and communication; Science, technology and innovation. The service replaced UK online.  
 More than 2000 websites use the gov.uk domain.
- **Office of the Deputy Prime Minister** [www.odpm.gov.uk](http://www.odpm.gov.uk). UK Government Department responsible, among other matters, for policy on: Building regulations; Civil resilience; Devolution; Fire; Planning; Regions; Sustainable communities.
- 53 ED.gov** [USA]  
**United States. Department of Education**  
[www.ed.gov](http://www.ed.gov)  
 Major sections grouped under: Students; Parents; Teachers; Administrators.
- **National Center for Education Statistics** <http://nces.ed.gov>. 'Primary federal entity for collections and analyzing data that are related to education in the United States and other nations.' Produce periodic *Trends in International Mathematics and Science Study* (TIMSS).
  - **Gateway to Educational Materials: GEM**  
[www.thegateway.org](http://www.thegateway.org). Consortium membership organization whose 'goal is to improve the organization and accessibility of the substantial collections of materials that are already available on various federal, state, university, non-profit, and commercial Internet sites'.
- 54 EUROPA: Gateway to the European Union**  
[http://europa.eu.int/index\\_en.htm](http://europa.eu.int/index_en.htm)  
 The home page has a section: What the European Union Does By Subject, with linked entries for 'Agriculture', 'Energy', 'Environment', 'Fisheries', 'Food Safety', 'Information Society', 'Public Health', and 'Research and Innovation'. At the introduction to the last of these, we read: 'The European Union produces almost one third of the world's scientific knowledge. The research and innovation underpinning this knowledge help deliver the prosperity and quality of life EU citizens expect. Joint programmes consolidate the work of EU countries. The main tool is the SIXTH FRAMEWORK PROGRAMME. This funds research in the member states and some other countries, and at the EU's own JOINT RESEARCH CENTRE.' This is followed by links to relevant work of the European Commission, Parliament, Council, etc.

- **EurActiv.com: EU News, Policy Positions and EU Actors online** [www.euractiv.com](http://www.euractiv.com). 'An independent survey positions EurActiv as the first portal on EU policies, while a readership survey proves its strong influence, based on independence, neutrality and languages.' (May 2003).
- **Europe Unit** [www.europeunit.ac.uk/home/index.cfm](http://www.europeunit.ac.uk/home/index.cfm). Sector-wide body primarily funded by Universities UK [q.v.] and three UK higher education funding councils. Aims to raise awareness of European issues affecting UK HE. Good set of background briefings.
- **IDEA: the electronic directory of the European institutions** <http://europa.eu.int/idea/en>. Electronic directory presenting the organization charts of the EU institutions, bodies and agencies in the eleven official EU languages.

## 55 **FirstGov.gov** [USA]

[www.firstgov.gov](http://www.firstgov.gov)

'The official US gateway to all government information.' The Site's engine will search some 50 million federal and state web pages; 130,000 websites link to FirstGov.

Information by Topic includes Sections on: Environment, energy and agriculture; Health; Reference and general government; and Science and technology. Within the Reference Centre there are links to Government and other sites concerned with Abbreviations and acronyms, Contacts and directories, Data and statistics, Laws and regulations, Libraries, News, Publications from the US Government.

An excellent core resource.

- **RegInfo.Gov: Where to find Federal regulatory information US General Services Administration and US Office of Management and Budget.** [www.reginfo.gov/public](http://www.reginfo.gov/public). Range of services including uniform reporting of data on regulatory and deregulatory actions under development throughout the Federal Government, covering over 60 departments, agencies, and commissions.
- **SciTechResources.gov: a catalog of government science and technology web sites** [www.scitechresources.gov](http://www.scitechresources.gov). Searchable catalogue of descriptions of websites that are entry points to government science and technology resources. A browsable list of links also provides a good starting point.
- **The United States government internet manual P. Garvin** Bernan Press, 2004. \$59.00. ISBN 1886222185. [www.bernanpress.com](http://www.bernanpress.com) [DESCRIPTION]. 'Contains more than 2000 site records that provide descriptions and URLs for each site. Evaluations are given for the most important and frequently sought sites'.
- **US government on the web: getting the information you need P. Hemon, R.E. Dugan and J.A. Shuler** 3rd edn, Libraries Unlimited, 2003, 492pp. \$50.00. ISBN 1591580862. Very clear and well laid out guide; good summary lists of URLs at the end of each chapter; helpful summary of government organization structure.
- **Using government information sources: electronic and print J.L. Sears and M.K. Moody** 3rd edn., Oryx Press, 2001, 550pp. £79.00. ISBN 1573562882.

## 56 **GAO: Accountability Integrity Reliability** [USA] **Government Accountability Office**

[www.gao.gov](http://www.gao.gov)

Independent, non-partisan agency that works for Congress.

Very well structured website, easy to use, good search facility providing access to remarkable range and depth of information. A single example is the GAO Highlights issue of July 2004 (a one-page summary of the full Report GAO-04-639) entitled: 'Women's participation in the sciences has increased, but Agencies need to do more to ensure compliance with Title IX'.

## 57 **GOST: a guide to the organisation of UK science, engineering and technology** **British Council**

[www.britishcouncil.org/science/gost](http://www.britishcouncil.org/science/gost)

The British Council 'connects people worldwide with learning opportunities and creative ideas from the UK and builds lasting relationships between the UK and other countries. We are the UK's international organisation for educational opportunities and cultural relations and are represented in 110 countries worldwide'.

GOST is an easily navigable set of pages, good for gaining a quick overview. It is accessible from the Council's Home Page Science Portal, which in turn has other useful information on 'UK Science', 'Research and collaboration', and 'Society and science', including downloadable copies of two monthly online news bulletins, Science Insight and European RTD Insight – the second produced in conjunction with UKRO ([www.ukro.ac.uk](http://www.ukro.ac.uk)): 'The UK's foremost information and advice service on EU research and higher education'.

## 58 **GPO Access** [USA]

**US Government Printing Office**

[www.gpoaccess.gov](http://www.gpoaccess.gov)

'Disseminates official information from all three branches of the Federal Government ... Provides online access to key Government publications.' GPO Access Resources by Topic includes the Sections: Environment; Food and Drugs; Health and Safety; Science and Technology. The page Federal Agency Internet Sites provides access to other Federal agency websites in partnership with Louisiana State University Libraries and the Federal Depository Library Program.

Users can securely buy official Federal publications online and locate a Federal Depository Library using a clickable map. A March 2004 meeting was the first activity in an initiative with the Federal depository library community to digitize the entire legacy collection of US government documents currently held in depositories. The Site also provides access to the Code of Federal Regulations, the Federal Register, and the United States Code.

There are details of GPO LISTSERV mailing lists; and – in conjunction with the University of North Texas libraries – a Cybercemetery of Former Federal Web Sites.

- **Catalog of US Government Publications** [www.gpoaccess.gov/cgp](http://www.gpoaccess.gov/cgp). 'Index to print and electronic publications created by Federal agencies. When available, links are provided to the full-text of these publications. Additionally, the locate libraries feature enables users to find libraries by state or area code.'
- **Government Information Locator Service** [www.gils.net](http://www.gils.net). Pioneering decentralized service that uses 'an open, low-cost, and scalable standard so that governments, companies, or other organizations can help searchers find collections of information, as well as specific information in the collections'.

## 59 **Her Majesty's Stationery Office** [UK]

[www.hmso.gov.uk](http://www.hmso.gov.uk)

Delivers a wide range of services to the public, information industry and government relating to access and re-use of government information. Site includes the full text of all legislation enacted by the UK Parliament and delegated legislation (Statutory Instruments) whether this applies to the UK as a whole or only to its constituent parts (e.g. Scotland). The aim is to publish these documents on the internet simultaneously or at least within 24 hours of their publication in printed form. However, HMSO notes that

documents which are especially complex may take longer to mount on the site. Full-text search facilities are available.

Access is also provided to Command Papers:

Parliamentary Papers which derive their name from the fact they are presented to the United Kingdom Parliament nominally by 'Command of Her Majesty', but in practice generally by a Government Minister. Command Papers are published on Departmental websites. Their subjects may be major policy proposals (White Papers) and consultation documents (Green Papers), diplomatic documents such as treaties, Government responses to Select Committee reports, reports of major committees of inquiry or certain departmental reports or reviews.

- **Civil Service Year Book** Biannual. £110.00 [2004]. [www.hmso.gov.uk/information/csyb.htm](http://www.hmso.gov.uk/information/csyb.htm) [DESCRIPTION]. Official reference for central government in the UK providing the most authoritative source of up-to-date information on the Civil Service. It is the essential guide to the work and structure of the Civil Service in the UK.
- **Official Documents** [www.official-documents.co.uk](http://www.official-documents.co.uk). Contains a selection of Government titles covering a very broad range of topics including the economy, work and welfare, health, transport and the environment. Two main categories of document are Command (White or Green) and House of Commons Papers.
- **UK 2005: the official yearbook of the United Kingdom of Great Britain and Northern Ireland** [www.statistics.gov.uk](http://www.statistics.gov.uk). 'The definitive overview of the United Kingdom in text, tables, charts, maps and (in the hardcopy version) colour photographs.' Very good readable summaries of activity in each economic sector: ideal as introductions, albeit from an 'official' standpoint.
- **UKOP** [www.ukop.co.uk](http://www.ukop.co.uk) [FEE-BASED]. 'The official catalogue of UK official publications since 1980. Containing 450,000 records from over 2000 public bodies, it is the most comprehensive source of information on official publications available.'

## 60 Higher Education Academy [UK]

[www.heacademy.ac.uk](http://www.heacademy.ac.uk)

Set up in 2004 incorporating – among other previous bodies – the UK Higher and Further Education's Learning and Teaching Support Network. The Network consists of a Generic Centre plus 24 Subject Centres, including (q.v.): Bioscience; Engineering; Geography, Earth and Environmental Sciences; Health Sciences and Practice; Information and Computer Sciences; Materials; Maths, Stats and OR Network; Medicine, Dentistry and Veterinary Medicine; Physical Sciences. (For the moment we have retained the prefix LTSN in the titles of these entries.) The Generic Centre sponsors work in a number of Project Areas (e.g. Curriculum; e-Learning; Learning and teaching portal; Problem and enquiry based learning; Research and scholarship) as well as providing a useful Glossary of terms in learning and teaching in higher education.

## 61 Higher Education Funding Council for England

[www.hefce.ac.uk](http://www.hefce.ac.uk)

'Promotes and funds high-quality, cost-effective teaching and research in universities and colleges in England.' Among much useful information regarding higher and further education in the UK, the site provides access to the results of the 2001 Research Assessment (RA) Exercise in which Institutions were able to submit research outputs in up to 69 subject areas (units of assessment) with each submission being given a quality rating, judged against standards of national and international excellence, on a seven-point scale: 5\* (five star) being at the top. The range of outputs considered included publications, products, even artistic

performances, assessed through peer review by panels of experts in the subject. (The next assessment is in 2008.)

There is also access to all the reports prepared during the 2003 RA Review: a valuable compendium of the challenges and problems of rating the quality of scientific and scholarly research.

- **HERO** [www.hero.ac.uk](http://www.hero.ac.uk). Aims to be 'the primary internet portal for academic research and higher education in the UK' and 'the natural entry point for enquiries about higher education in the UK'. Contains a very extensive wide-ranging and annotated Reference section.
- **Joint Academic Coding System: JACS** [www.hesa.ac.uk/jacs/completeclassification.htm](http://www.hesa.ac.uk/jacs/completeclassification.htm). Subject classification used for the UK's Higher Education Statistics Agency. Provides brief scope notes for each of the several hundred subjects categorized: a useful glossary.
- **UK Higher Education Research Yearbook** Evidence Ltd, 2004. £245.00. [www.evidence.co.uk/yearbook.html](http://www.evidence.co.uk/yearbook.html) [DESCRIPTION]. Directory 'for those looking where to invest in UK research, who has the most income, who has the best profile in any area of research'. Website also gives details of their *University Publications Database* based on ISI WEB OF KNOWLEDGE.

## 62 HM Treasury [UK]

**Great Britain. HM Treasury**

[www.hm-treasury.gov.uk](http://www.hm-treasury.gov.uk)

'The strategy sets out a long term vision for science in the UK, including information on the Spending Review outcome, and the arrangements for working in partnership with other funders and users of research to ensure the UK science base is sustainable in the long term, and continues to contribute to productivity growth.'

*Similarly accessible via HM Treasury's website is the cross-departmental Consultation Document issued in March 2004: Science and innovation: working towards a ten-year investment framework.*

- **Investing in innovation: a strategy for science, engineering and technology** Great Britain. Department of Trade and Industry and Great Britain. Department for Education and Skills The Stationery Office, 2002. Long term vision for science in the UK; arrangements for working in partnership with other funders and users of research to ensure the UK science base is sustainable in the long term, and continues to contribute to productivity growth.
- **SET for Success** [www.hm-treasury.gov.uk](http://www.hm-treasury.gov.uk). The Roberts' Review into the supply of science and engineering skills in the UK, commissioned as part of the UK Government's productivity and innovation strategy. Accessible with other useful documents within the Enterprise and Productivity section.

## 63 Japan Science and Technology Agency

[www.jst.go.jp/EN](http://www.jst.go.jp/EN)

Interesting source providing wide range of information under these headings: Creation of technological seeds; Creation of new industries backed by new technologies; Dissemination of scientific and technological information; Promotion of regional research activities; Public understanding of science and technology; Research exchanges at home and abroad. There is also an Organization Chart for the Agency – which became an independent administrative institution in October 2003.

JST, alongside CHEMICAL ABSTRACTS SERVICE in the USA and FIZ KARLSRUHE in Germany, is a partner in STN INTERNATIONAL: customers in Japan thereby having access to all the STN databases; JST providing the content of the bibliographic database JICST-Eplus. Many other database activities of the Agency are described under the heading 'Promotion of dissemination of science and technology information',

supplementing the links from the Home Page. However, a number of the items listed were either out-of-date or unavailable when checked.

■ **Database Promotion Center, Japan**

[www.dpc.or.jp/english/index.html](http://www.dpc.or.jp/english/index.html). Publishes the annual *Databases in Japan*: see website.

■ **Japan Science and Technology Information Aggregator, Electronic: J-STAGE**

<http://info.jstage.jst.go.jp/contents/eng/index.html>. Supports the release of papers within Japanese science and technology electronic journals. Via the JST Link Center, research papers placed within J-STAGE are linked to worldwide systems such as ChemPort, PubMed and CrossRef: all [q.v.].

■ **JST English Articles of Science and Technology: J-EAST** Monthly. <http://j-east.tokyo.jst.go.jp>. English citations and abstracts for documents published in Japan covering all fields of science, technology, and medicine. Sources include about 3000 journals and serials, conference proceedings, technical reports. 991,987 items: August 2004.

■ **Science Council of Japan** [www.scj.go.jp/en/scj/about/index.html](http://www.scj.go.jp/en/scj/about/index.html). Founded 1949 'as a special agency ... to promote science in government, industry and everyday life. It represents Japanese scientists at home and abroad with the philosophy that science is the foundation upon which a civilized nation is built'.

**64 National Audit Office** [UK]

[www.nao.org.uk](http://www.nao.org.uk)

Although the Office does not have a great involvement with STM matters, when they do treat an issue, the (independent of government) results can be very valuable: e.g. Tackling cancer in England: saving more lives (March 2004); The British Library – Providing services beyond the Reading Rooms (July 2004); Reforming NHS Dentistry: ensuring effective management of risks (November 2004); Stopping illegal imports of animal products into Great Britain (March 2005).

**65 National Research Council Canada**

[www.nrc-cnrc.gc.ca](http://www.nrc-cnrc.gc.ca)

'The Government of Canada's premier organization for research and development.' It is organized into three key areas: Physical Sciences and Engineering; Life Sciences and Information Technology; Technology and Industry Support – each of which encompasses a range of subject-based Institutes covering manufacturing technology, biotechnology, health, ICT, etc.

The Council is responsible for CISTI (see below) and in May 2004, they launched a new 'Student Science & Tech' whose aim is to 'foster understanding among young Canadians of the benefits of science and technology, both for their everyday lives and their future careers'.

■ **Canada Institute for Scientific and Technical**

**Information** [cisti-icist.nrc-cnrc.gc.ca](http://cisti-icist.nrc-cnrc.gc.ca). The Library collection is one of the largest in North America and its material is available for document supply to registered users. Searches can be made in the catalogues of CISTI and its partner the Canadian Agricultural Library.

**66 National Science Foundation** [USA]

[www.nsf.gov](http://www.nsf.gov)

The independent agency of the US Government established to promote the progress of science. It provides awards, contracts and grants. Wide-ranging website: a good place to start can be the well presented multimedia series of sections 'Overviews of NSF Research', early 2005 with headings: Arctic and Antarctic; Astronomy and space; Biology; Chemistry and materials; Computing; Earth and

environment; Education; Engineering; Mathematics; Nanoscience; People and security; Physics.

A number of NSF Divisions are referenced elsewhere.

■ **Coalition for National Science Funding** [www.cnsweb.org](http://www.cnsweb.org). Group of organizations 'supporting the goal of increasing the national investment in the National Science Foundation's research and education programs in response to the unprecedented scientific, technological, and economic opportunities facing the USA'.

■ **National Science Board** [www.nsf.gov/nsb](http://www.nsf.gov/nsb). Governing Board of NSF with 24 part-time members, appointed by US President and confirmed by Senate. Publishes biennially *Science and Engineering Indicators*: latest volume, 2004.

■ **Science and Engineering Statistics** [www.nsf.gov/statistics](http://www.nsf.gov/statistics). Division 'to provide a central clearinghouse for the collection, interpretation, and analysis of data on scientific and engineering resources, and to provide a source of information for policy formulation by other agencies of the Federal Government.'

**67 Natural Sciences and Engineering Research Council of Canada**

[www.nserc.ca](http://www.nserc.ca)

Awards scholarships and research grants through peer-reviewed competition; builds partnerships among universities, colleges, governments and the private sector. The NSERC Newsbureau offers a service to the media which can 'rapidly put you in touch with the researchers, the work, the universities and, where relevant, the industrial partners' funded by NSERC' (about 65% of Canadian university researchers working in the natural sciences and engineering being NSERC-funded).

**68 Office of Science** [USA]

[www.science.doe.gov](http://www.science.doe.gov)

Located within the Department of Energy, and 'the single largest supporter of basic research in the physical sciences in the United States, providing more than 40 percent of total funding for this vital area of national importance. It oversees – and is the principal federal funding agency of – the Nation's research programs in high-energy physics, nuclear physics, and fusion energy sciences ... (It) manages fundamental research programs in basic energy sciences, biological and environmental sciences, and computational science ... (And it) is the Federal Government's largest single funder of materials and chemical sciences, and it supports unique and vital parts of US research in climate change, geophysics, genomics, life sciences, and science education.'

The Office of Science has overall responsibility for 10 national laboratories, amongst them Argonne, Brookhaven, Oak Ridge, as well as overseeing work at 6 others, including Lawrence Livermore and Los Alamos.

Within the Office, the Office of Scientific and Technical Information (OSTI) leads the Department of Energy's e-government initiatives for disseminating R & D information.

■ **Facilities for the future of science: a twenty-year outlook**

Downloadable PDF2003, 48pp. Proposes portfolio of 28 prioritized new scientific facilities and upgrades to current facilities spanning the scientific disciplines to ensure the US retains its primacy in critical areas of science and technology well into the next century.

**69 Office of Science and Technology** [UK]

[www.ost.gov.uk](http://www.ost.gov.uk)

'The UK is second only to the United States in terms of the volume and influence of scientific publications and the number of major international science prizes won ... The Office of Science and Technology leads for Government in

supporting excellent science, engineering and technology and their uses to benefit society and the economy.'

Good overview of UK Government activity including descriptions of the work of key departments and committees, budget allocations, strategic initiatives, policy issues, work on enterprise and innovation, and on science and society. Most sections have sets of external links listed.

- **Foresight** [www.foresight.gov.uk](http://www.foresight.gov.uk). Aims to provide challenging visions of the future, to ensure effective strategies now. It does this by providing a core of skills in science-based future projects and unequalled access to leaders in government, business and science.
- **Promoting science, engineering and technology for women** [www.set4women.gov.uk/set4women](http://www.set4women.gov.uk/set4women). Unit set-up to tackle women's under-representation in the SET community. 'Our aim is to improve the recruitment, retention and progression of women throughout SET education and employment and to increase their involvement in shaping SET policy.'
- **Sciencewise: Engaging society with science and technology** [www.sciencewise.org.uk](http://www.sciencewise.org.uk). New scheme, 2004, 'to support projects that build the capacity of scientists, policy-makers and citizens to engage in constructive dialogue on key issues arising from new developments in science and technology'.
- **Woman into Science, Engineering and Construction** [www.wisecampaign.org.uk](http://www.wisecampaign.org.uk). Promotes science and engineering as a valuable and interesting career option for women.

## 70 Office of Science and Technology Policy [USA]

[www.ostp.gov/index.html](http://www.ostp.gov/index.html)

'Congress established OSTP in 1976 with a broad mandate to advise the President and others within the Executive Office of the President on the effects of science and technology on domestic and international affairs. The 1976 Act also authorizes OSTP to lead an interagency effort to develop and to implement sound science and technology policies and budgets and to work with the private sector, state and local governments, the science and higher education communities, and other nations toward this end.'

- **Science for the 21st century** Downloadable PDF2004, 48pp. [www.ostp.gov/nstc/21stcentury/Final\\_sm.pdf](http://www.ostp.gov/nstc/21stcentury/Final_sm.pdf). Produced by the National Science and Technology Council: 'The principal means for the President to co-ordinate science, space, and technology to co-ordinate the diverse parts of the Federal research and development enterprise.'

## 71 Organisation for Economic Co-operation and Development

[www.oecd.org](http://www.oecd.org)

Group of now 30 Countries 'best known for its publications and statistics. Its work covers economic and social issues from macroeconomics, to trade, education, development and science and innovation'.

The clearly laid-out site provides – via the Statistics Portal – access to statistical data by topic, including for sub-fields of: Agriculture and fisheries; Energy; Environment; Health; Industry and services; Information and communication technology; Science, Technology and patents. There is a very extensive Glossary of Statistical Terms, including entries (with sources) for such as 'acid rain', 'biotechnology', 'cement', 'database', 'extinct species', 'farmstead', 'gene', and so on – as well as for all the standard statistical terms.

For Science and Innovation, OECD 'assesses how science, technology, innovation and education policies can efficiently contribute to sustainable economic growth and employment creation. It provides policy advice on coping with the challenges arising from developments in new science-based industries, notably biotechnology'. There are various

sections, including one Measuring Science and Technology, OECD providing 'methodological guidelines, databases, indicators and policy-relevant analysis in this area, focusing mainly on R&D, patents, human resources and innovation'. An index to 'Information by Country' gives access to details of events, news releases, publications, working papers, etc related to each country.

- **OECD Science, Technology and Industry Outlook** [www.oecd.org/document](http://www.oecd.org/document) [DESCRIPTION]. 5th in biennial series, focusing on: Public/private partnerships for innovation; Innovation in the service sector; Human resources for science and technology; Contribution of multinational enterprises to productivity growth. Statistical annex.
- **Research and Development Statistics** [www.oecd.org/document](http://www.oecd.org/document) [DESCRIPTION]. Latest is 2003 edn. Wide range of data on resources devoted to R&D in OECD countries including: source of funds; type of costs; R&D personnel by occupation and level of qualification.
- **Science, technology and innovation for the 21st century** [www.oecd.org/document](http://www.oecd.org/document). Report with useful background papers, e.g.: *Science and Innovation Policy: Key Challenges and Opportunities (2004)*; *Science and Technology Statistical Compendium (2004)*; *Patents and Innovation: Trends and Policy Challenges (2004)*.
- **SourceOECD** [new.sourceoecd.org](http://new.sourceoecd.org) [FEE-BASED]. OECD's online library of statistical databases, books and periodicals. NEW SourceOECD launched December 2004: SourceOECDNews had article: 'Our public Beta launch, what it means for librarians.'

## 72 Research [EUR]

**European Commission. Directorate for Research**

[http://europa.eu.int/comm/research/index\\_en.cfm](http://europa.eu.int/comm/research/index_en.cfm)

'The gateway to news and information about Scientific Research and Technological Development in the European Union.' Rather a busy site and there can be an unfortunate use of pop-ups. But a very rich source of information.

- **Science and society in Europe** [http://europa.eu.int/comm/research/science-society/index\\_en.html](http://europa.eu.int/comm/research/science-society/index_en.html). 'Advances in science drive European growth, but sometimes give rise to fears and scepticism among citizens.' Gathers policymakers, researchers, citizens to consider science and governance; ethics; scientific awareness; youth and science; women & science.

## 73 Research Councils UK

[www.rcuk.ac.uk](http://www.rcuk.ac.uk)

Strategic partnership set up to champion science, engineering and technology supported by the seven UK Research Councils. These include: BIOTECHNOLOGY AND BIOLOGICAL SCIENCES RESEARCH COUNCIL; COUNCIL FOR THE CENTRAL LABORATORY OF THE RESEARCH COUNCILS; ENGINEERING AND PHYSICAL SCIENCES RESEARCH COUNCIL; MEDICAL RESEARCH COUNCIL; NATURAL ENVIRONMENT RESEARCH COUNCIL; PARTICLE PHYSICS AND ASTRONOMY RESEARCH COUNCIL – all referenced elsewhere in this text.

Browsing the website is a good introduction to current UK research concerns: especially its political and social dimensions.

- **e-Science** [www.rcuk.ac.uk/escience](http://www.rcuk.ac.uk/escience). Good overview of the UK's e-Science programme '... the large scale science that will increasingly be carried out through distributed global collaborations enabled by the Internet ...'
- **RESCOLINK** [www.rcuk.ac.uk/rescolink](http://www.rcuk.ac.uk/rescolink). Focal point of the library and information services of the UK Research Councils. Details of all the services.
- **A Vision for Research 2003** [www.rcuk.ac.uk/documents/vision\\_final.pdf](http://www.rcuk.ac.uk/documents/vision_final.pdf). Sets out to describe the research challenges for the next ten to twenty years that will shape the world we live in.

- 74 Science and Technology Network [UK]**  
**Great Britain. Foreign and Commonwealth Office**  
[www.fco.gov.uk](http://www.fco.gov.uk)  
 Aims 'to inform British science policy by reporting on developments around the world, by communicating UK achievements to other countries, by encouraging international collaboration and by developing links and contacts for the benefit of the UK research community ... The network reports to a wide customer base and works with a range of UK organisations, including Government Departments, parliamentary bodies, Research Councils, British Council, learned societies, industry, universities and other public sector bodies.'  
 Also useful is the Section Environment: 'There are many international environmental issues that need urgent attention, such as Climate Change, Sustainable Development, Biodiversity, and Environmental Security. The FCO's Environmental Work, in co-operation with other government departments, consists in ensuring that the UK contributes to international responses in these areas to improve the global environment.'

- 75 Science Portal [AUS]**  
**Australia. Department of Education, Science and Training**  
[www.science.gov.au](http://www.science.gov.au)  
 One of a series of Australian Government customer focused websites whose aim is 'to provide you with easy online access to government information and services. This allows you to find what you are looking for without having to know the structure of government.' Entry points from the Home Page cover: My Research Field; Sectors; Research Grants and Programs; Science Policy; Awareness; Directories and Databases. The Sectors are: Agriculture; Construction; Defence; Environment; Health; Information and Communication Services; Manufacturing; Mining and Energy; Transport; Education and Training.  
 Separately accessible from [australia.gov.au](http://australia.gov.au) are portals headed: AUSTRALIAN GOVERNMENT AGRICULTURE PORTAL, ENVIRONMENT PORTAL, and HEALTHINSITE.  
 ■ **Federation of Australian Scientific and Technological Societies** [www.fast.org](http://www.fast.org). 'We represent the interests of some 60,000 scientists and technologists in Australia.' Over 50 societies in membership.

- 76 The United Kingdom Parliament**  
**Great Britain. Parliament**  
[www.parliament.uk](http://www.parliament.uk)  
 Access – among much else – to the work and reports of the Select Committees of the House of Commons and House of Lords: Environment, Food and Rural Affairs; Health; Science and Technology; Trade and Industry. These can provide exceptionally useful overviews of current concerns, including the full texts of Reports and Oral and Written evidence. For instance, during May–June 2004, the Science and Technology Committee of the House of Commons considered (among other matters): government investment in nanotechnology; human reproductive technologies and the law; Within REACH – The EU's new chemicals strategy; work of the Council for the Central Laboratory of the Research Councils; and – controversially – the future of scientific publications.  
 The main site's 'What's On' page sets out various links to current and future business of the Houses of Parliament. There is a service 'Watch Parliament Online'.  
 ■ **Parliamentary Office of Science and Technology**  
[www.parliament.uk/parliamentary\\_offices/post.cfm](http://www.parliament.uk/parliamentary_offices/post.cfm). Office of the two

Houses of Parliament (Commons and Lords) providing 'independent and balanced analysis of public policy issues related to science and technology.'

- **Science and Technology Committee**  
[www.parliament.uk/parliamentary\\_committees/science\\_and\\_technology\\_committee.cfm](http://www.parliament.uk/parliamentary_committees/science_and_technology_committee.cfm). 'Appointed by the House of Commons to examine the expenditure, administration and policy of the Office of Science and Technology and its associated public bodies'.

- 77 United Nations**  
[www.un.org/english](http://www.un.org/english)  
 Easily accessible from the Home Page of this very pleasant site – naturally among much else – are: the UN System Sites (which include the 'Official Web Locator for the UN System', the 'UN Information Centres', the 'UN System Pathfinder' – links to major publications and internet resources of the UN system, and the 'Depository Libraries'); Publications, Stamps and Databases; the file of Recent Additions; and the Daily Briefing.

- Well worth spending time browsing around.
- **CyberSchoolBus** <http://cyberschoolbus.un.org>. The UN's lively global teaching and learning project. Curriculum areas include: Saving tomorrow's world; Health; Cleaner oceans; UN in space. Includes much other valuable material targeted at 12–18 year-olds: a well thought through service.
- **Inventory of International Economic and Social Classifications** <http://unstats.un.org/unsd/cr/family1.asp>. List of all classifications registered into the International Family of Classifications as of 1 January 2002.
- **Quantifying the world: UN ideas and statistics M. Ward** Indiana University Press, 2004, 256pp. \$29.95. ISBN 0253216745. 'Explores the economic, social, and environmental dimensions of the UN's statistical work and how each dimension has provided opportunities for describing the well-being of the world community.'
- **UN News Centre** [www.un.org/News](http://www.un.org/News). Good entrée to current concerns.
- **UN Statistics Division** <http://unstats.un.org/unsd>. Gateway to the full range of statistics produced by the Division including the generic *Statistical Yearbook* as well as in specialized fields such as energy, environment, industry, trade. Links to other international statistics and to national offices.
- **United Nations Shared Cataloguing and Public Access System: UNCAPS** <http://uncaps.unsystem.org>. 'Provides a single point of access to library catalogs, indexes and abstract databases, library holdings, links to full-text resources, and archives ... a Web interface to the electronic resources of the libraries of the UN system of organizations.'

- 78 United Nations Economic Commission for Europe**  
[www.unece.org](http://www.unece.org)  
 'One of the five regional commissions of the United Nations. It is the forum where the countries of western, central and eastern Europe, central Asia and North America – 55 countries in all – come together to forge the tools of their economic cooperation. That cooperation concerns such areas as economics, statistics, environment, transport, trade, industry and enterprise development, sustainable energy, timber and habitat.' Wide range of information on activities.

- 79 United Nations Educational, Scientific and Cultural Organization**  
[www.unesco.org](http://www.unesco.org)  
 From the entry Natural Sciences on the Home Page, we are led to a series of Thematic Areas (e.g. Fresh water; People and nature; Oceans; Earth sciences; Basic and engineering sciences; Coastal regions and small islands; etc.) and Intergovernmental and international programmes (e.g. International Geological Correlation Programme (IGCP);

International Hydrological Programme (IHP); Intergovernmental Oceanographic Commission (IOC); Man and the Biosphere (MAB); etc.).

The UNESCO LIBRARIES PORTAL is an international gateway to information for librarians and library users. There is a similar UNESCO Archives Portal. Also, a UNESCO FREE SOFTWARE PORTAL.

- **Encyclopedia of Life Support Systems** [www.eolss.net](http://www.eolss.net). 'An integrated compendium of sixteen encyclopedias. It attempts to forge pathways between disciplines in order to show their interdependence and helps foster the transdisciplinary aspects of the relationship between nature and human society.'
- **Innovations in science and technology education** E.W. Jenkins, ed. 2003, 348pp. €16.50. ISBN 923103894X. [www.unesco.org/science](http://www.unesco.org/science) [DESCRIPTION]. 'Examines the state of science and technology education (STE) worldwide at a crucial time in human history ... it has been universally recognized that science and technology have a pivotal role to play ... the foundations of which are laid at school.'
- **International Association of Universities** [www.unesco.org/iau/index.html](http://www.unesco.org/iau/index.html). Site provides access to Universities of the world: the complete list: 9200 university level institutions from 184 countries; 8000 non-university level institutions of higher education are also included in their database.
- **UNESCO thesaurus** <http://databases.unesco.org/thesaurus>. 7000 English terms (8600 French/Spanish) covering education, culture, natural sciences, social and human sciences, communication and information.

## 80 United States House of Representatives US House of Representatives

[www.house.gov/Welcome.html](http://www.house.gov/Welcome.html)

Access to the work and reports of the House Committees: Agriculture; Energy and commerce; Resources; Science. An efficient engine will 'Search all House Committee and Representative websites': mid:2004, some 180,000 documents in total. There are links to the websites of other parts of the Legislative Branch of Government, of the Executive and Judicial Branches, of State/Local Governments, and of course to the LIBRARY OF CONGRESS. A nice, clean site.

- **United States Senate US Senate**. [www.senate.gov](http://www.senate.gov). Lists with links of Senate Committees – Standing; Special, select, and other; Joint. A Virtual Reference Desk 'organizes information by subject and provides links to related materials'.

## Research centres & institutes

### 81 Centre for the History of Science, Technology & Medicine [UK]

**University of Manchester**

[www.ls.manchester.ac.uk/research/centres](http://www.ls.manchester.ac.uk/research/centres)

'Founded in 1986 to bring together the University's interest in history of science, technology and medicine, and to act as a focus for the discipline in the Manchester region and beyond.'

- **National Archive for the History of Computing** [www.chstm.man.ac.uk/na/c](http://www.chstm.man.ac.uk/na/c). 'Opened in 1987 to provide a repository for the documents and images of computer history, and a centre to encourage its study. A rich collection is now available to scholars.'
- **Wellcome Unit for the History of Medicine** [www.chstm.man.ac.uk/wellcome.htm](http://www.chstm.man.ac.uk/wellcome.htm). 'Focuses on the social, cultural and political history of medicine since the industrial revolution, and on the recent histories of biomedical sciences and technologies.'

### 82 Centre National de la Recherche Scientifique [FR]

[www.cnrs.fr/index.html](http://www.cnrs.fr/index.html)

'The French National Center for Scientific Research (CNRS) is a public basic-research organization that defines its mission as producing knowledge and making it available to society. The CNRS has 26,000 employees (among which 11,600 researchers and 14,400 engineers and technical and administrative staff). Its budget amounts to 2214 million euros for the year 2004. The 1260 CNRS service and research units are spread throughout the country and cover all fields of research.'

### 83 Chinese Academy of Sciences

<http://english.cas.ac.cn>

Comprises five academic divisions, 108 scientific research institutes, over 200 science and technology enterprises, and more than 20 supporting units including one university, one graduate school and five documentation and information centers. Well laid out English language website providing access to a large volume of information, relevant to activities within and outside the Academy. For instance, there is a daily newsletter CAS News, but one can also link to the website of the The Ministry of Science and Technology and thence to the texts of the China Science and Technology Newsletters, whose issues appear every 10 days or so. A good place to start when exploring scientific work in China.

#### ■ National Natural Science Foundation of China

[www.nsf.gov.cn](http://www.nsf.gov.cn). 'Founded in February 1986 with the approval of the State Council. It is an institution for the management of the National Natural Science Fund, aimed at promoting and financing basic research and some applied research in China.'

### 84 Commonwealth Scientific and Industrial Research Organisation [AUS]

[www.csiro.au](http://www.csiro.au)

Australia's leading research organization has research interests in agribusiness, energy and transport, environment and natural resources, information, communication and services, manufacturing, mineral resources and health. The website has plans and reports of activities and policies, information sheets and education projects and resources.

### 85 Joint Research Centre [EUR]

[www.jrc.cec.eu.int](http://www.jrc.cec.eu.int)

'Europe faces public concern about complex issues such as food contamination, genetic modification, chemical hazards, global change, environment and health, and nuclear safety. The Joint Research Centre (JRC) supports EU policy makers in the conception, development, implementation and monitoring of policies to tackle such trans-national and global problems. In effect, the JRC is a research-based policy support organisation working for the EU policy-maker.'

The JRC consists of seven different institutes, each with its own focus of expertise, on five separate sites around Europe.

### 86 Kavli Foundation

[www.kavlifoundation.org](http://www.kavlifoundation.org)

'Dedicated to the goals of advancing science for the benefit of humanity and promoting increased public understanding of and support for scientists and their work. The Foundation has selected three areas in which to focus its activities: cosmology, neuroscience, and nanoscience. An international program of research institutes, prizes, symposia, and endowed professorships is being established to further these goals.'

The Foundation established its 10th Institute – at MIT – in August 2004.

### 87 Max-Planck-Gesellschaft

[www.mpg.de/english/portal](http://www.mpg.de/english/portal)

Independent, non-profit research organization that primarily promotes and supports research at its own institutes. Very well structured site provides (English language) access to a fund of information.

- **Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities** [www.zim.mpg.de/openaccess-berlin/berlindeclaration.html](http://www.zim.mpg.de/openaccess-berlin/berlindeclaration.html). Produced at the conference on Open Access to Knowledge in the Sciences and Humanities, Berlin, October 2003. List of signatories.

### 88 National e-Science Centre [UK]

[www.nesc.ac.uk](http://www.nesc.ac.uk)

The best – and an excellent – entrée to the wide range of activities now taking place in the UK under the ‘e-Science’ umbrella. Provides access to the *NeSC Bibliographic Database* (‘be patient’) which, August 2004, had over 1000 entries. Useful sets of links to, for instance, work on the Grids planned to underpin much e-Science activity, including to a helpful glossary. There is a good Newsroom.

- **e-Science Community InfoPortal** <http://tyne.dl.ac.uk/InfoPortal>. Very rich set of resources ‘designed to increase the effectiveness of users of HPC [high performance computing] resources on the Grid’.
- **Revolutionizing science and engineering through cyber-infrastructure National Science Foundation**. [www.communitytechnology.org/nsf\\_ci\\_report](http://www.communitytechnology.org/nsf_ci_report). ‘Overarching finding is that a new age has dawned in scientific and engineering research, pushed by continuing progress in computing, information, and communication technology, and pulled by the expanding complexity, scope, and scale of today’s challenges’.

### 89 National Institute of Advanced Industrial Science and Technology [JAP]

[www.aist.go.jp](http://www.aist.go.jp)

The ‘new’ AIST was formed in 2001 and comprises 15 research institutes previously under the former Agency of Industrial Science and Technology (the ‘former’ AIST) in the Ministry of International Trade and Industry (and the Weights and Measures Training Institute). The Institute is Japan’s largest public research organization with some 3200 employees.

### 90 Science in Society Research Programme [UK]

<http://sbs-xnet.sbs.ox.ac.uk/scisoc>

Goal ‘to explore and facilitate the rapidly changing relations between science (including engineering and technology) and wider society. In so doing, it seeks to place British social science at the heart of international debates and practical interventions concerning the public understanding of science, science and technology policy, science studies, and the nature of citizenship and expertise within contemporary society.’ Nice, clean, site: good entry point to UK work in this arena.

### 91 Wellcome Trust [UK]

[www.wellcome.ac.uk](http://www.wellcome.ac.uk)

Leading biomedical research charity. Apart from their extensive scientific research programme (the *Site Index* reveals the extent of this), the Trust ‘funds research and sponsors activities to: stimulate public interest in science; inform and facilitate public debate on science and its

application; improve understanding of the social, ethical, historical and cultural context of science’. In support, a *Resources* section ‘provides a wealth of resources and services for teachers in order to provide in-depth background, up-to-date information and ideas of how to make science come alive in the classroom’.

The Trust also has a wide-ranging involvement with study of the *History of Medicine* including maintaining world-class library facilities. The *Wellcome Library for the History and Understanding of Medicine* sustains a good set of resource guide and online bibliography pages and is also responsible for PSCI-COM.

#### ■ Science policy and information news (SPIN)

[www.wellcome.ac.uk/knowledgecentre/spin](http://www.wellcome.ac.uk/knowledgecentre/spin). Helpful weekly round-up of news relevant to science policy.

## Associations & societies

### 92 Association of American Colleges and Universities

[www.aacu.org](http://www.aacu.org)

‘The leading national association concerned with the quality, vitality and public standing of undergraduate liberal education.’

Helpful section Science and Health: ‘AAC&U works to advance broad-based systemic innovation to connect science education, especially in general education, to large public questions where scientific inquiry and knowledge are essential. AAC&U also works to support educational leaders in developing an academic focus on health and HIV disease to improve student learning and our common health. AAC&U’s work in these areas also focuses on improving science education for students who may never major in a scientific field; connecting science reform to more robust and relevant general education programs; encouraging curricular attention to issues of gender and science; and stimulating informed civic engagement with scientific questions.’

- **Higher Education Directory** [www.hepinc.com/FrameHED.htm](http://www.hepinc.com/FrameHED.htm) [DESCRIPTION]. Annual publication, the 2005 edn giving ‘standardized profiles on 4364 institutions giving detailed information on highest offering, accreditations, date established, enrollment, IRS status and much, much more’.
- **National Faculty Directory** Thomson Gale. [www.galegroup.com](http://www.galegroup.com) [DESCRIPTION]. Alphabetic listing of names and addresses of teaching faculty members at American colleges and universities – and at Canadian institutions that use instructional materials primarily in English.

### 93 Association of American Universities

[www.aau.edu](http://www.aau.edu)

‘Founded in 1900 by a group of fourteen universities offering the PhD degree. The AAU currently consists of sixty American universities and two Canadian universities. The association serves its members in two major ways. It assists members in developing national policy positions on issues that relate to academic research and graduate and professional education. It also provides them with a forum for discussing a broad range of other institutional issues, such as undergraduate education.’ Examples of Research Issues considered are ‘Animals in Research’, ‘Cloning’, ‘Conflicts of Interest and Misconduct’, ‘Costs of Research’. There is access to the universities’ views on many other key topics.

### Association of British Science Writers

See entry no. 6333

**94 Council of Graduate Schools** [USA]

[www.cgsnet.org](http://www.cgsnet.org)

'Organization of institutions of higher education in the United States, Canada, and across the globe engaged in graduate education, research scholarship, and the preparation of candidates for advanced degrees.' Good coverage of research issues on attractive easy to navigate site: many valuable leads.

**95 Council on Undergraduate Research** [USA]

[www.cur.org](http://www.cur.org)

Mission is 'to support and promote high-quality undergraduate student-faculty collaborative research and scholarship'. Divisions include: Biology; Chemistry; Geosciences; Math and Computer Sciences; Physics and Astronomy.

**96 European Science Foundation**

[www.esf.org](http://www.esf.org)

'Promotes high quality science at a European level. It acts as a catalyst for the development of science by bringing together leading scientists and funding agencies to debate, plan and implement pan-European initiatives.' Early 2005 had 78 members from 30 European countries. Organize exploratory workshops, networks, and programmes including: EUROCORES European co-operative Research Projects; and Forward Looks Enabling Europe's scientific community to develop medium to long term views and analyses of future research developments in multidisciplinary topics, and interact with the policy makers from ESF Member Organizations.

**97 Foundation for Science and Technology** [UK]

[www.foundation.org.uk](http://www.foundation.org.uk)

'Purpose is to provide a neutral platform for debate of policy issues that have a science, engineering or technology element.' Valuable Lecture and Dinner Discussion Summaries (e.g. 'The future of science publication – open access or library serials?': 23 June 2004), as well as downloadable PDF issues of the *FST Journal*. Also Register of Learned and Professional Societies (£15.00: nearly 400 entries).

**98 InterAcademy Council**

[www.interacademycouncil.net](http://www.interacademycouncil.net)

'Created by the world's science academies to mobilize the best scientists and engineers worldwide to provide high quality advice to international bodies – such as the United Nations and the World Bank – as well as to other institutions.' Good informative website.

- **Academy of Sciences for the Developing World**

[www.twas.org](http://www.twas.org). '84 percent of the Academy's 768 members, the 645 'Fellows', are scientists living and working in 72 countries of the South. The 123 'Associate Fellows' are citizens of 17 advanced countries. 15 TWAS members are Nobel Laureates.' Formerly the Third World Academy of Sciences.

- **International Network for the Availability of Scientific Publications** [www.inasp.info](http://www.inasp.info). 'Our mission is to enable worldwide access to information and knowledge with particular emphasis on the needs of developing and transitional countries.'

- **Inventing a better future: a strategy for building worldwide capacities in science and technology**

Downloadable PDF2004, 161pp. ISBN 9069844028. [www.interacademycouncil.net/report.asp?id=6258](http://www.interacademycouncil.net/report.asp?id=6258). Excellent IAC Report. Notes 'digital libraries of science and technology can bring knowledge to

virtually everyone, everywhere' and proposes that STM resources should be made available on the web for free, or at modest cost, to all in developing nations.

**99 National Academies** [USA]

[www.nationalacademies.org](http://www.nationalacademies.org)

'Advisers to the nation on science, engineering, and medicine.'

Comprises the NATIONAL ACADEMY OF SCIENCES, the NATIONAL ACADEMY OF ENGINEERING, the INSTITUTE OF MEDICINE and the National Research Council. The expert members of these bodies advise the US federal government and the public.

The site is an excellent entrée to current work and thinking on STM in the USA. There are a number of good ways to navigate, including through 'Major Divisions', 'Quick Links', 'Topics'.

- **The Center for Education** [www7.nationalacademies.org/cfe](http://www7.nationalacademies.org/cfe).

Formed 1999 as locus for education activities of the National Academies. Its mission is to promote evidence-based policy analysis that is 'both responsive and anticipatory' – addressing critical national issues in education research, policy, and practice.

- **Interacademy Panel on International Issues**

[www.nationalacademies.org](http://www.nationalacademies.org). 'Global network of the world's science academies, launched in 1993. Its primary goal is to help member academies work together to advise citizens and public officials on the scientific aspects of critical global issues.'

- **IP @ National Academies** <http://ip.nationalacademies.org>. 'From Internet content protection to human gene patenting, Intellectual Property (IP) in many forms [has] emerged from legal obscurity to public debate. This website serves as a guide to the Academies' extensive work on IP and a forum to discuss ongoing work.'

- **The National Academies Press** USA. [www.nap.edu](http://www.nap.edu). Note especially The Discovery Engine which 'searches more than 500,000 book pages from nearly 3000 formal publications' plus 'more than 100,000+ web documents: current projects, testimony, press releases, news documents, etc'.

- **National Research Council** [www.nationalacademies.org/nrc/](http://www.nationalacademies.org/nrc/). 'The principal operating agency of both the National Academy of Sciences and the National Academy of Engineering in providing services to the government, the public and the scientific and engineering communities.'

**100 Science Council** [UK]

[www.sciencecouncil.org](http://www.sciencecouncil.org)

'The Science Council is a leading independent body with a membership of over 25 professional institutions and learned societies, supported by their member networks of more than 300,000 scientists across the breadth of science and mathematics. The main purpose of the Science Council is to promote the advancement and dissemination of knowledge of and education in science, pure and applied.'

'The Science Council received its Royal Charter on 14 October 2003, Licensed Bodies on behalf of the Science Council can now award the prestigious designation of Chartered Scientist (Csci) to individual scientists who meet the high standards for the qualification.'

**101 Scientists for Global Responsibility** [UK]

[www.sgr.org.uk](http://www.sgr.org.uk)

'Promotes ethical science and technology – based on the principles of openness, accountability, peace, social justice, and environmental sustainability. Our work involves research, education, lobbying and providing a support network for ethically-concerned scientists.'

'SGR is an independent UK-based membership organisation. We have around 600 scientist members, and

are supported by some of the UK's top scientists, for example Prof. Sir Martin Rees and Prof. Stephen Hawking. Unlike many scientific bodies it is our policy to refuse funding from the military or large corporations involved in controversial science and technology – which means we depend for most of our finance on our members and supporters.'

- **International Network of Engineers and Scientists for Global Responsibility** [www.inesglobal.com](http://www.inesglobal.com). Founded 1991. Efforts focus on disarmament and international peace, ethics, justice and sustainable development. INES is affiliated with the United Nations and with UNESCO as an NGO. Links to wide range of related organizations throughout the world.
- **Open Society Institute** [www.soros.org](http://www.soros.org). Serves as the hub of the Soros Foundations Network aiming to promote open societies by shaping government policy and supporting education, media, public health, and human and women's rights, as well as social, legal, and economic reform.

## 102 Union of Concerned Scientists [USA]

[www.ucsus.org](http://www.ucsus.org)

Founded in 1969 by faculty members and students at MIT, is 'an independent non-profit alliance of more than 100,000 concerned citizens and scientists. We augment rigorous scientific analysis with innovative thinking and committed citizen advocacy to build a cleaner, healthier environment and a safer world. UCS's programs are the means by which we accomplish this. They are the pressure points translating vision into action. Through them, we connect the best scientific insights with the knowledge and support of an astute citizenry and apply them to the machinery of government at all levels—with results that have set a standard for effective advocacy for decades'.

Current Programs – the pages of each leading to rich sets of resources – are: Clean Energy; Clean Vehicles; Food and Environment; Global Environment; Global Security.

## 103 Universities UK

[www.universitiesuk.ac.uk](http://www.universitiesuk.ac.uk)

Promotes and supports the work of UK universities. Policy statements, publications, etc.

Libraries, archives, museums

## 104 24 Hour Museum [UK]

[www.infoville.org.uk/culture/museums/culture\\_24hour.htm](http://www.infoville.org.uk/culture/museums/culture_24hour.htm)

A UK government-funded independent charity provides this gateway to details of some 3000 UK museums, galleries and heritage attractions – titled The National Virtual Museum – as well as much other useful information. An early 2005 database search for 'science' retrieved details of: 25 most relevant museums or galleries; 642 related museums or galleries; 211 articles; 23 trails; 52 events; 39 educational resources. Nice map search facility finds the location of particular types of collection. City Heritage Guides. Excellent entrée.

## 105 British Library

[www.bl.uk](http://www.bl.uk)

The UK's national library and 'the only organisation with a statutory public good remit to collect, preserve and provide long-term research information for the whole of the UK'. The BL's stocks include 150 million items, in most languages, with 3 million new items being incorporated every year; and it operates the world's largest document delivery service

providing some 4 million items a year to customers all over the world.

The web page Resources for research provides links to resources within the British Library and selected links to other online resources. Sections include: Environment; Health; Patents; Science and Technology. An alternative approach is to start with the pages Collections, and then link through to the Sections headed: Patents, trademarks and designs; Reports, conferences and theses; Science, technology and business; Research resources. Two British Library services of especial value within STM are: BRITISH LIBRARY – PATENTS; and INSIDE.

### ■ The British Library Integrated Catalogue

<http://catalogue.bl.uk>. Describes over 12 million items held by the BL; can also be used to order items. An excellent resource; easy to use. Includes details of 60,000 serials to which the BL subscribes.

### ■ British National Bibliography

[www.bl.uk/services/bibliographic/natbib.html](http://www.bl.uk/services/bibliographic/natbib.html) [DESCRIPTION]. Listing of UK books and new serials, including forthcoming books and now electronic resources, UK and Irish publishers being obliged by law to send a copy of all new publications to the BL. Its records are available in the British Library Public Catalogue.

### ■ National Library Catalogues Worldwide University of Queensland

[www.library.uq.edu.au/natlits](http://www.library.uq.edu.au/natlits). Excellent listing maintained within the University Library. Part of a more extensive gateway to library catalogues in Australia and elsewhere.

### ■ Research Libraries Network

[www.rln.ac.uk](http://www.rln.ac.uk) [DESCRIPTION]. New body set up in autumn 2004, initially for three years up to the end of July 2007. It will be led by an executive unit, with a budget of up to £3 million, which will be based at the British Library and take strategic guidance from an advisory board.

## 106 Deutsche Bibliothek

[www.ddb.de/index\\_e.htm](http://www.ddb.de/index_e.htm)

'The national library and national bibliographic information centre for the Federal Republic of Germany. It is responsible for the collection, processing and bibliographic indexing of all German and German-language publications issued since 1913. Die Deutsche Bibliothek co-operates closely with all national and international library institutions and organisations. Within this context, it has a leadership role in the development and application of common rules and standards for Germany.'

### ■ Bibliodata

[www.ddb.de/index\\_e.htm](http://www.ddb.de/index_e.htm) [DESCRIPTION]. The largest literature database in Germany, contains bibliographic data on books, academic publications, maps, conference reports, periodicals, etc. in the collections of DDB. The database is updated weekly and is available on two online hosts.

## 107 Deutsches Museum

[www.deutsches-museum.de/e\\_index.htm](http://www.deutsches-museum.de/e_index.htm)

'One of the biggest museums of technology and science in the world. It is not a state museum but an independent public institution. Under the terms of its constitution it has the right of self administration and functions under the protection and supervision of the Bavarian state government.'

Extensive interesting multimedia website.

## 108 Exploratorium [USA]

[www.exploratorium.edu](http://www.exploratorium.edu)

Well presented, virtual science museum that contains over 15,000 web pages exploring hundreds of different topics. It is based on the museum of the same name in San Francisco. Many topics contain interactive, audio and visual

material. Resources for educators include activities and photographs.

### 109 Franklin Institute [USA]

<http://sln.fi.edu>

Good range of learning resources, attractively presented.

### 110 Intel International Science and Engineering Fair

Intel Corporation.

[www.intel.com/education/isef](http://www.intel.com/education/isef)

'The world's largest pre-college science competition that provides an opportunity for the world's best young scientists and inventors to come together to share ideas, showcase cutting-edge science projects, and compete for more than US \$3 million in awards and scholarships.' Part of Intel Innovation in Education.

### 111 Library and Archives Canada

[www.collectionscanada.ca](http://www.collectionscanada.ca)

Created from the *National Library of Canada* and the *National Archives of Canada* in 2004.

- **Amicus** [www.collectionscanada.ca/amicus](http://www.collectionscanada.ca/amicus). 'Search over 28 million full records from 1300 Canadian libraries ... Access the entire database including National Library records ... The first place for items about Canada (#Canadiana).' Free of charge.

- **Canada's Digital Collections** <http://collections.ic.gc.ca>. 'One of the largest sources of Canadian content on the Internet. More than 600 collections are available, celebrating Canada's history, geography, science, technology and culture.'

- **Canadian Information by Subject**

[www.collectionscanada.ca/caninfo](http://www.collectionscanada.ca/caninfo). Provide links to information about Canada from internet resources around the world. The subject arrangement is in the form of a 'Subject Tree', based on the structure of the Dewey Decimal Classification system.

- **Government Information** [www.collectionscanada.ca/8/4](http://www.collectionscanada.ca/8/4). Selective collection of links to Canadian government sites and key federal documents, including a page of links to the news release pages of individual federal government departments.

- **Theses Canada** [www.collectionscanada.ca/thesescanada](http://www.collectionscanada.ca/thesescanada). Central access point for Canadian theses and information about the Theses Canada program.

### 112 Library of Congress [USA]

[www.loc.gov](http://www.loc.gov)

'The nation's oldest federal cultural institution and serves as the research arm of Congress. It is also the largest library in the world, with nearly 128 million items on approximately 530 miles of bookshelves.' The Home Page link Global gateway: world culture and resources includes a section 'Portals to the world' which, for each of the world's countries, lists 'resources selected by Library of Congress experts'. Check out the link 'Science and technology' for the country of interest.

Alternatively, approach the wealth of accessible resources via the Librarians and archivists pages which has sections headed: Library functions (e.g. Building digital collections; Public service and reference; Standards); Services and other resources (e.g. Publications and products; Thesauri); Most requested topics (e.g. Digital reference).

- **Ask a Librarian: An online reference service from the Library of Congress** [www.loc.gov/rr/askalib](http://www.loc.gov/rr/askalib). 'Correspondents are encouraged to use local and online resources. For those seeking further assistance from the Library of Congress, the staff will respond to their reference and information needs to the extent possible.'

- **Classification Web: web access to LC classification and LC subject headings** [www.loc.gov/cds/classweb.html](http://www.loc.gov/cds/classweb.html) [FEE-BASED].

Via an agreement with OCLC ONLINE COMPUTER LIBRARY CENTER, users can now enter a Dewey classification number and display a list of matches to LC subject headings or LC classification numbers as they have been applied in LC bibliographic records.

- **Encyclopedia of the Library of Congress: for Congress, the nation and the world** J. Aikin and J.Y. Cole Bernan Press, 2004, 400pp. \$95.00. ISBN 0890599718. 'History of the Library of Congress that also provides users with official, current information about Library of Congress collections, services, and administrative units.'

- **Library of Congress Authorities** <http://authorities.loc.gov>. Forms of names (for persons, places, meetings, and organizations), titles, and subjects used on bibliographic records.

- **Library of Congress Classification**

[www.loc.gov/catdir/cpsolcco/lcco.html](http://www.loc.gov/catdir/cpsolcco/lcco.html). Letters and titles of the main classes of the LC Classification. Complete text of the classification schedules in printed volumes may be purchased from the Cataloging Distribution Service. Online access to complete text via Classification Web.

- **Library of Congress Online Catalog** <http://catalog.loc.gov>.

Great resource – but can sometimes be difficult to get connection: 'Our peak usage is typically Tuesdays, Wednesdays, and Thursdays between 10:00am and 2:00pm (US Eastern Time)'.

- **Library of Congress subject headings** 28th edn 2005. <http://www.loc.gov/cds/lcsh.html> [DESCRIPTION]. Forthcoming: over 270,000 total headings and references. 'The only subject headings list accepted as the world wide standard. LCSH is the most comprehensive list of subject headings in print in the world. It's the one tool no librarian should be without.'

- **MARC code lists for relators, sources, description conventions** [www.loc.gov/marc/relators/relahome.html](http://www.loc.gov/marc/relators/relahome.html). Lists of codes intended for use in MARC 21 Authority, Bibliographic, Classification, Community Information, and Holdings records. The lists contain over 500 discrete codes, several of which are obsolete.

- **Science Tracer Bullets Online** [www.loc.gov/rr/scitech/tracer-bullets/tbs.html](http://www.loc.gov/rr/scitech/tracer-bullets/tbs.html). Research guides that help locate information on science and technology subjects. Many are now rather old; but can still be valuable for historical research. The Library also has short Series Science reference guides and Everyday mysteries.

- **THOMAS: legislative information on the internet**

<http://thomas.loc.gov>. Invaluable freely accessible compendium of Federal legislative information.

### 113 Linda Hall Library of Science, Engineering and Technology [USA]

[www.lhl.lib.mo.us](http://www.lhl.lib.mo.us)

Strong collections in mathematics, astronomy, physics, chemistry, and engineering as well as geology, life sciences and the history of science (including digitized material). The online library catalogue, LEONARDO, is a valuable resource, and there are useful listings of databases and websites.

The former New York-based Engineering Societies Library – originally founded by five leading US-based societies (AIME, ASCE, ASME, IEEE, AICHE) – consolidated all of its library services to the Linda Hall Library in Kansas City in 1998.

### 114 Museum of Science, Boston [USA]

[www.mos.org](http://www.mos.org)

This major US museum has been displaying scientific and technological exhibits since 1830 and now also has a number of online exhibits that can be viewed on the web. The museum's library focuses on education resources.

- 115 National Archives** [UK]  
www.nationalarchives.gov.uk  
'The National Archives, which covers England, Wales and the United Kingdom, was formed in April 2003 by bringing together the Public Record Office and the Historical Manuscripts Commission. It is responsible for looking after the records of central government and the courts of law, and making sure everyone can look at them. The collection is one of the largest in the world and spans an unbroken period from the 11th century to the present day.'  
See also the entry elsewhere for ACCESS TO ARCHIVES; also that for the ARCHIVES HUB.
- **National Digital Archive of Datasets** <http://ndad.ulcc.ac.uk>. Preserves and provides online access to archived digital data and documents from UK central government departments.
- 116 National Archives and Records Administration** [USA]  
www.archives.gov  
'Independent Federal agency that preserves our nation's history and defines us as a people by overseeing the management of all Federal records.' A good place to start is the web-accessible version of the *Guide to Federal Records in the National Archives of the United States* whereby 'comprehensive coverage of NARA's holdings of federal records, i.e., records that originated in the executive, judicial, and legislative branches of the federal government, is provided – at a very high level'. It is also well worth checking out the services of the NARA Archives Library Information Center (ALIC).
- 117 National Diet Library** [JAP]  
www.ndl.go.jp/en/index.html  
The only national library in Japan.
- **Directory of Japanese Scientific Periodicals** [www.ndl.go.jp/en/data/opac.html](http://www.ndl.go.jp/en/data/opac.html). Catalogue of almost 14,000 journals. There are subject listings and the entries for each title list secondary resources indexing that publication. In English.
- 118 National Library of Australia**  
www.nla.gov.au  
The Library co-ordinates the activities of the Australian Subject Gateways Forum, 'a group of subject gateways owners, formed in February 2000, who have developed gateway services for the Australian Higher Education sector ... The ASGF includes a number of subject-specific gateways (covering areas such as agriculture, sustainable development, education, literature, law, music and performing arts) and non-subject specific gateways. The primary target audience for the gateways are under- and post-graduate students and lecturers in the HE sector, as well as professionals and researchers in the field. A subject gateway has been defined by the ASGF as: "a Web-based mechanism for accessing a collection of high quality, evaluated resources identified to support research and/or learning in a particular subject discipline".'
- **Australian Science and Technology on the Internet** [www.nla.gov.au/oz/sciencew.html](http://www.nla.gov.au/oz/sciencew.html). Extensive links to universities, research institutes, government agencies, associations and societies, conferences, electronic journals and discussion lists. Subject listings for 28 topics plus sections on science for schools, libraries and archives.
  - **Picture Australia** [www.pictureaustralia.org](http://www.pictureaustralia.org). Excellent service allowing simultaneous search of several online pictorial collections. Clicking on a 'thumbnail' will send you to the website of the relevant agency to view the full-size version, where you can order a high-resolution copy if required.
- 119 National Museum of Science and Industry** [UK]  
www.nmsi.ac.uk  
Comprises the National Museum of Photography, Film and Television, the National Railway Museum, and the Science Museum. 'NMSI is stepping out. It has to. Human invention, innovation and creativity have reached breakneck speed. Such is the avalanche of change in the fields that NMSI represents – science, technology, medicine, transport and the media – that it is imperative for everyone, staff and public, to try to make sense of these rapid and often confusing developments.'
- **Dana Centre** [www.danacentre.org.uk](http://www.danacentre.org.uk). 'A stylish, purpose-built venue, complete with a café/bar, appealing to adults. It is a place for them to take part in exciting, informative and innovative debates about contemporary science, technology and culture.'
- 120 New York Public Library** [USA]  
www.nypl.org  
The Library's 'research collections (for reference only, and organized as *The Research Libraries*, with four major centres) resemble the holdings of the great national and university libraries'.  
The website of the *Science, Industry and Business Library (SIBL)* centre provides access to a well presented range of information about the Library's collections and services, including a good set of 'Research guides' ('Apparel and textiles'; 'Building and construction', 'Climatology and climatological data' etc. as well as more general topics such as 'Biographical resources'; 'Company information'; 'Government'; etc.), covering reference sources, indexes and abstracts, websites, and so on.  
A good example of its type.
- **The New York Public Library desk reference** 4th edn, Hyperion Books, 2002, 1015pp. \$34.95. ISBN 0786868465. The 'Science Desk Reference' version of this was last published 1996.
- 121 Radcliffe Science Library** [UK]  
www.bodleian.ox.ac.uk/dept/rsi  
Reference library and the science department of the Bodleian Library Oxford. Thus via the UK's official legal deposit scheme receives a free copy of all British scientific publications (including popular and children's publications). Also collects extensively overseas. Especially strong collections of older material.
- **Science information services in Oxford: a virtual tour** [www.bodleian.ox.ac.uk/users/millsr/science](http://www.bodleian.ox.ac.uk/users/millsr/science). Helpful pleasant facility.
- 122 Smithsonian Institution** [USA]  
www.si.edu  
'The world's largest museum complex and research organization.' From the Research section of the website are links to quite detailed – but nicely accessible – descriptions of the work of the Smithsonian's many Science Centers (e.g. Astrophysical Observatory; Carrie-Bow Marine Field Station; Environmental Research Center; Migratory Bird Center; Natural History Museum Research and Collections).  
The Smithsonian's Library Catalogues provide access to some 1.5 million volumes, including 15,000 journal titles, rare books and manuscripts. SIL collections are 'particularly strong in natural history, tropical biology, and Chesapeake Bay area ecology ... the history of science and technology; aerospace history, astronomy, and planetary sciences ...'
- **Encyclopedia Smithsonian** [www.si.edu/resource/faq](http://www.si.edu/resource/faq). '... helps answer frequently asked questions about the Smithsonian with links to

resources on subjects from Art to Zoology'. Good opportunity to browse around a wide range of introductory resources.

- **Library and archival exhibitions on the web**  
www.sil.si.edu/SILPublications/Online-Exhibitions. Links to online exhibitions that have been created by libraries, archives, and historical societies, as well as to museum online exhibitions with a significant focus on library and archival materials.
- **National Museum of American History**  
http://americanhistory.si.edu. Includes the sections: Division of the History of Technology; Division of Information Technology and Society; Division of Science, Medicine, and Society.
- **Smithsonian Science Libraries**  
www.sil.si.edu/libraries/science.htm. Useful gateway to the various libraries.

## Portal & task environments

### 123 AccessScience: McGraw-Hill encyclopedia of science and technology online

McGraw Hill.

www.accessscience.com [FEE-BASED]

Daily updated online versions of the encyclopedia and the MCGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS, as well as 'Research Updates' from the publisher's *Yearbook of Science and Technology* supplemented by late-breaking news from the magazine SCIENCE.

Also includes biographies of 2000 scientists from the *Hutchinson Dictionary of Scientific Biography* and much else: literature citations; links to evaluated related websites; learning resources and study guides; image banks; 'questions answered in our weekly Q&A'; and so on.

- **McGraw-Hill Education: showcase of online resources**  
www.mheducation.com/showcase.html. Entrée to range of services: AccessMedicine; AccessScience; ALEKS; GradeSummit; Harrison's Online; The McGraw-Hill Learning Network; McGraw-Hill eBookstore; PageOut; PassKey; PowerWeb; Primis Online; TechCONNECT. See also DIGITAL SOLUTIONS below.
- **McGraw-Hill encyclopedia of science and technology**  
9th edn 2002, 15600pp. \$2495.00. ISBN 0079136656.  
http://books.mcgraw-hill.com/ [DESCRIPTION]. 20 v. 7100 articles covering 97 fields of science; more than 5000 contributors including 30 Nobel Prize winners; 12,000 digitally prepared illustrations, including 90 full-colour plates.
- **McGraw-Hill yearbook of science and technology 2005**, 432pp. \$175.00. ISBN 0071445048. Attractively presented articles on topics of current interest and concern. Good use of graphics and colour. 'An extensive subject index makes finding information a snap.' Worth seeking out.

### 124 Alacra: Aggregate – Integrate – Package – Deliver

www.alacra.com [FEE-BASED]

'Provides access to more than 100 premium commercial business databases that contain financial information, economic data, business news, and investment and market research. Alacra provides the requisite information in the appropriate format, gleaned from such prestigious content partners as Thomson Financial™, Barra, The Economist Intelligence Unit, Factiva, Mergerstat® and more.'

Although primarily aimed at the commercial marketplace, a very good example of trends in the publicly available information supply industry – recognizing the need to add significant value to the offerings of individual publishers such as Thomson (who themselves incorporate third-party content in their services). Apart from customers being able to 'select

from a variety of options to integrate, display and access Alacra applications and premium content in their own environment', noteworthy is their Alacra Concordance Database: a 'master authority file of company and industry identifiers that are cross-indexed against all premium databases and content. Premium providers use various identifiers for a company or industry and in many cases, have assigned their own'.

### 125 Amazon

www.amazon.co.uk

'The leading online retailer of products that inform, educate, entertain and inspire.' Notable in this context not only for the breadth of its coverage of published resources; but also for its easily navigable subject catalogue. For instance, linking from 'Books' through 'Subject' to 'Scientific, Technical and Medical', and then to 'Engineering', 'Chemical and Biochemical Engineering', and finally 'Biosensors' displayed 50 items, ranging from the latest 'Advances' Volume to a now 'hard-to-find' market research report. Well worth browsing through is their 'Reference' section within 'Science and Nature' which is sub-classified by a score of STM subject areas.

Amazon continues to offer major innovations in its services, such as the A9 service referenced below.

- **Barnes & Noble** www.bn.com/library. Now have a 'comprehensive online bookstore for Library Professionals'. A good alternative to Amazon with a similarly useful subject tree.
- **Blackwell's Online Bookshop** http://bookshop.blackwell.co.uk. Good detailed browsable subject categorization based on the Book Industry Classification (BIC) system. Opportunity to include/exclude titles from the company's US catalogue.
- **Open Search A9.com** www.a9.com. Amazon service bringing together diverse content in a single search interface. Early 2005, the service was extended to allow registered users to personalize their raft of content sources and results display. Could well become a major generic search service.

### 126 BBC

www.bbc.co.uk

Provides inter alia a very extensive compendium of current and archival STM information: especially tailored to the non-specialist. From the Home Page explore Health and Science and Nature, but also Learning with subheadings including 'Computers and IT', 'Geography', 'Maths', and 'Weather' as well as 'Health' and 'Science'. Or use the extensive and well structured A–Z index. An excellent professional service.

### 127 Blackwell Synergy

www.blackwell-synergy.com

As well as access to the content of most of Blackwell's 800 or so journals, including via a hierarchical subject tree, there is a link through this gateway to The Librarian Site which in turn leads to a series of potentially useful Subject Pages, each of which can contain as appropriate information for: Reading corner; E-mail alerts; Forthcoming books; Society partners; etc.

### 128 ConnectSciences

Institut de l'Information Scientifique et Technique

http://connectsciences.inist.fr

Provides free access to a full range of scientific and technical information resources and services: Article Catalog (access to 8.7 millions of journal articles held in INIST collections); New additions to the bibliographic database in Science,

Technology and Medicine – PASCAL – (current three months) and to the bibliographic database in Humanities and Social Sciences – FRANCIS – (current year). Easy to use search facility (English language interface). Especially worth checking for recent French language and European material.

■ **PASCAL Institut de l'Information Scientifique et Technique.**

[www.inist.fr/en/PRODUITS/pascal.php](http://www.inist.fr/en/PRODUITS/pascal.php) [DESCRIPTION]. Multilingual, multidisciplinary database that covers the core scientific literature in Science, Technology and Medicine with special emphasis on European literature (45% of the indexed documents). Indexes some 15 million documents, 1973 to present.

## 129 CSA Illumina

CSA.

[www.csa.com](http://www.csa.com) [FEE-BASED]

CSA is a privately-owned US information company, formerly in part trading under the name Cambridge Scientific Abstracts.

At the core of its activities CSA developed the Internet Database Service (IDS) providing access to 'more than 50 databases covering major areas of research, including materials science, environmental sciences and pollution management, biological sciences, aquatic sciences and fisheries, biotechnology, engineering, computer science, sociology, art history, and linguistics'. There were the usual search facilities, including an interactive Thesaurus feature. Lists of the primary journals covered by each database are freely accessible: many of the databases are cited elsewhere in TNW (noting that their titles and scopes seem to change relatively frequently).

However, in December 2004, CSA released their new platform for online bibliographic and full-text searching with the number of databases available for search having grown to over one hundred.

Meanwhile, a number of the collections are (still) available in print editions.

- **Biblioalerts** Monthly. [www.biblioalerts.com](http://www.biblioalerts.com). 1500 reports on detailed STM topics based on CSA's dataset. Each report includes up to 250 items, and is compiled by the editors at CSA. The reports can be ordered through any one of currently 16 publishing partners.
- **Conference Papers Index** [www.csa.com/factsheets/cpi-set-c.php](http://www.csa.com/factsheets/cpi-set-c.php). Some 1.5 million records dating back to 1982. 'Subject emphasis since 1995 has been in the life sciences, environmental sciences and the aquatic sciences, while older material also covers physics, engineering and materials science'.
- **Sage Full-Text Collections** SAGE Publications. [www.sagefulltext.com](http://www.sagefulltext.com). In 2004 introduced two new collections: Materials Science; Nursing and Health Sciences, expanding their coverage of social sciences into STM. Accessible through CSA.
- **Science and Technology Digest** [www.csa.com/factsheets/scitechdig-set-c.php](http://www.csa.com/factsheets/scitechdig-set-c.php) [DESCRIPTION]. Abstracting and indexing database that covers selected articles from over 100 worldwide sources in the applied and theoretical sciences. Journals range from widely circulated, newsstand publications to academic journals.

## 130 Dialog

Thomson Dialog.

[www.dialog.com](http://www.dialog.com) [FEE-BASED]

'As part of the Deep Web, which is estimated to be 500 times larger than the content accessible via Web search engines, Dialog products offer unparalleled depth and breadth of content coupled with the ability to search with precision and speed. Our collection of over 900 databases handles more than 700,000 searches and delivers over 17 million document page views per month.'

Good to look at first are the 'Top 10 Most Frequently Downloaded Documents from [dialog.com](http://dialog.com)'. And to get a reasonably swift overview of the range of data accessible, browse through the Dialog Bluesheets, which 'contain detailed instructions on search techniques for the special features of each database, including file description, subject coverage, date range, update frequency, sources of the data, and the origin of the information'.

Dialog has a number of Portal and Technology Partners including: Autonomy; BEA WebLogic; IBM WebSphere; and Vignette.

- **Dialog DataStar** [www.dialog.com/products/datastar](http://www.dialog.com/products/datastar) [FEE-BASED]. Comprehensive European-based service acquired by Dialog in 1988. Particular emphasis on biomedical, pharmaceutical and health care information, especially within a European context.
- **Dialog eLinks** [www.dialog.com/products/ejournal](http://www.dialog.com/products/ejournal) [FEE-BASED]. Partnership with over 100 publishers and aggregators to provide access to the full text of articles from more than 11,000 journals.
- **Dialog NewsRoom** [www.dialog.com/sources/newsroom](http://www.dialog.com/sources/newsroom) [FEE-BASED]. Single source covering more than 8000 separate periodical sources, approximately 80% in full text, from more than 100 countries.
- **Dialog Profound** [www.dialog.com/products/profound](http://www.dialog.com/products/profound) [FEE-BASED]. Specializes in industry and market data sourced from market research reports; newspapers, magazines and trade journals; analyst reports; economic analyses and forecasts; statistical data; etc.
- **NewsEdge** [www.dialog.com/products/productline/newsedge.shtml](http://www.dialog.com/products/productline/newsedge.shtml) [FEE-BASED]. News delivered via a wide variety of formats and routes. 'Our editorial experts sift through the clutter, delivering only the stories and updates business people really need.' Highly recommended by INFORMATION ADVISOR.

## 131 Digital Solutions

McGraw-Hill.

<http://mcgraw-hill.co.uk/readytolaunch>

McGraw-Hill Europe, Middle East and Africa gateway to the wide range of 'digital solutions' offered by the company. Similar gateways were available for other geographical regions (though – as so often – sites and site maps frequently change). Details of the major services below.

- **Online Learning Centres** [www.mcgraw-hill.co.uk/textbooks](http://www.mcgraw-hill.co.uk/textbooks). Book-specific supporting websites, including resources for both lecturers and students, with a Website Gallery where text supporting websites can be browsed.
- **PageOut** <http://mcgraw-hill.co.uk/pageout>. 'Offers a wizard-style template that enables lecturers to create a professionally designed, structured website in less than an hour! ... Free to lecturers who adopt any McGraw-Hill textbook. In addition, we host your website from our server.'
- **PowerWeb** [http://mcgraw-hill.co.uk/he/digital\\_solutions/powerweb](http://mcgraw-hill.co.uk/he/digital_solutions/powerweb). 'An expert for each discipline analyzes the day's news to show students how it is relevant to their field of study and to help them apply the concepts they are learning to real world events.' Newsfeeds used include: FT, BBC, ABC, Discovery Channel.
- **Primis** [www.mhhe.com/primis](http://www.mhhe.com/primis). Service allowing course tutors to select chapters from existing McGraw-Hill textbooks – some 700,000 pages of content – and create customized learning tools. The service – *inter alia* – provides a useful list of the company's extensive e-book collection.

## 132 EBSCO Information Services

[www.ebsco.com](http://www.ebsco.com) [FEE-BASED]

'The only vendor involved in selling print subscriptions, e-journals and online databases.' Operate the EBSCONET serials management system allowing administrators to order, search, claim and renew periodicals using their database of some 282,000 titles, including print and electronic formats. 50% of these are US titles, 50% non-US

But the company also – through EBSCOhost – provides access to the content of some 150 databases and over 10,000 e-journals (with title, ISSN, publisher details for each freely accessible). Using the EBSCO SmartLinks technology, EBSCOhost search results provide links to the full text of articles in other EBSCOhost databases and in e-journals on subscription through EBSCO or available from CrossRef member publishers.

There is also a freely-accessible Library Reference Center comprised of indexing and abstracts from more than 90 library trade magazines and journals.

### 133 European Information Network Services

[www.eins.org](http://www.eins.org) [FEE-BASED]

From 1999, successor system to the former 'Information Retrieval Services' of the European Space Agency.

'The EINS (European Information Network Services) organisation provides GEM and the Complementary Services. GEM is a resource for scientific, technical and medical information. Complementary Services additionally provide news, business and legal information ... EINS is: a series of Service Providers (online host systems) working in co-operation with the British Library; a network of National Centres providing customer support; a Technological Centre, CINECA, providing computing, networking and Internet facilities; an Administration Centre, COBIDOC, providing statistical usage data, invoicing data and liaison with Service Providers. The organisation is co-ordinated by the British Library.'

The service providers are: CAS; CINECA; DIMDI; FIZ Karlsruhe; LexisNexis. National centres are located in: Austria; Belgium; France; Hungary; Italy; Netherlands; Norway; Spain; Sweden; UK. The overall service has a particularly strong set of chemistry-related databases – as well as of those related to space research.

■ **GEM** [www.eins.org/publications/price\\_list/pricelist-unitedkingdom.htm](http://www.eins.org/publications/price_list/pricelist-unitedkingdom.htm) [FEE-BASED]. Offers access to a wide range of STM databases: the URL lists these with their prices for the UK. (There are price lists and other relevant information for other countries.).

### 134 Factiva

[www.factiva.com](http://www.factiva.com) [FEE-BASED]

News and archival service covering some 9000 sources from 118 countries in 22 languages, with access to more than 900 of the sources available on or before the date of publication.

There is an impressive range of types of source material covered: Newswires (e.g. Dow Jones, Reuters – the joint owners of the Service); Newspapers (e.g. *New York Times*, *Financial Times*); Television and radio transcripts (e.g. BBC, CNN); Magazines (e.g. *The Economist*, *BusinessWeek*); Pictures; Company reports; Historical market data; etc.

All this can be organized to provide 'knowledge at the point of decision': 'Our standards-based workflow products provide developers with tools and capabilities needed to embed content and functionality into applications such as portals, intranets or CRMs. Users get access to relevant and related information from all sources in their everyday applications. You get increased usage, productivity and better decision-making.'

■ **Factiva Taxonomy** [www.factiva.com/products/workflow](http://www.factiva.com/products/workflow). 'Whether just getting started with your taxonomy project, have design issues or are stalled, Factiva has a team of information professionals with the taxonomy skills, experience and products to help keep your knowledge solutions fresh and accurate'.

### 135 Find/SVP

[www.findsvp.com](http://www.findsvp.com) [FEE-BASED]

Leading 'knowledge services company that offers a continuum of custom business intelligence, advisory, research and consulting solutions to address clients' critical business needs'. Although the thrust of the company's offerings is targeted at the business executive market, the wide mix of types and levels of service is well worth exploring as a good exemplar. These range from reference-type answering services, through in-depth research reports and current awareness, to full-blooded consultancy.

The Company's Quick Consulting Service uses more than 100 full-time research professionals and a network of 1700 technical and science experts who have access to a 'resource collection' containing: '3000 online databases and the Internet; 12,000 proprietary subject and company files; Current and back issues of 2000 periodicals; Hundreds of specialized directories and reference works'.

■ **Information Advisor** *Information Today* Monthly. \$165.00 [Introductory]. [www.informationadvisor.com](http://www.informationadvisor.com). Newsletter providing information professionals with sources and strategies for conducting effective business research. Useful 'head-to-head analysis of the most popular information services'.

■ **NERAC** [www.nerac.com](http://www.nerac.com). US-based company which 'employs nearly 100 Information Specialists, all scientists, engineers or business professionals, to deliver customized search reports by Web account, email or print'. Specializes in science, technology, and intellectual property.

### 136 Google

<http://labs.google.com>

Currently, the world's leading web search engine.

The URL gives access to Google Labs which 'showcases a few of our favorite ideas that aren't quite ready for prime time. Your feedback can help us improve them. Please play with these prototypes and send your comments directly to the Googlers who developed them.' Includes Google Scholar which restricts searching to journal articles, abstracts and other scholarly literature.

Late 2004, Google announced a mass-digitization effort of documents held by libraries in Oxford, Harvard, Michigan, and Stanford universities together with those of the New York Public Library. This could transform the volume of – especially historical – material accessible online, and has led some to wonder whether physical libraries have a future. (They do.)

In a rapidly developing arena, perhaps also worth noting here are: the 'Sci/Tech' and 'Health' subsets of Google News – 4500 news sources updated continuously; Google Directory – with entries able to be viewed in Google PageRank order; and Google Catalog – 'applies Google's sophisticated search technology to thousands of scanned mail-order catalogs, from industrial adhesives to designer clothing and gourmet food'.

### 137 HighBeam Research

HighBeam Research Inc.

[www.highbeam.com](http://www.highbeam.com)

'Runs an online research engine for individuals, filling the gap between free search engines and high-end research services ... Provides one place where you can access the free Web, online services to which you subscribe (both for-pay services and free services requiring registration) and our proprietary eLibrary archive of 32 million articles from 2800 respected publishers. We bundle this access with powerful tools to help

you locate, organize and deliver your research – in short – to get you answers.’

Basic Membership is free and includes access to a number of research tools unavailable to casual visitors who do not sign up: 100, 000 ‘researchers’ signed up within 20 days of the launch of the service in January 2004. Full Membership is \$99.95 per annum [2005] allowing access to article full text and other benefits, including creating Research Groups, customized groupings of favourite sources.

This is a very interesting niche development, and should be pursued. The site is clearly organized, works well, and gives excellent background information. The company said at its launch: ‘HighBeam wants to be the very best at providing customers with pretty good answers to serious business, educational, and personal questions. Our role is to serve the huge market that finds Google inadequate for its serious research needs and finds the high-end services overkill. With the launch of our new service, our biggest competitor will be Google and the perception that you can do serious research on it. Google is a wonderful service, but it is increasingly focused on facilitating ecommerce.’

- **Encyclopedia.com** [www.encyclopedia.com](http://www.encyclopedia.com). Free service ‘providing users with more than 57,000 frequently updated articles from the Columbia Encyclopedia, Sixth Edition. Each article is enhanced with links to newspaper and magazine articles as well as pictures and maps’.

### 138 Infotrieve

[www.infotrieve.com](http://www.infotrieve.com) [FEE-BASED]

Well established company providing document delivery, table of contents, database searching, and other library-related services. The Table of Contents (TOC) Alert database is ‘one of the largest aggregations of cross-disciplinary content, with specialization in science, technology and medicine. There are over 13,000 alert-able titles in the collection’.

Infotrieve provides a ‘full-service’ document delivery service, offering ‘a single point of access to a wide variety of sources, tracking the statistics you need, and adapting the process to fit your workflow – we add value to the entire process. Our service is not limited to a particular collection or database, our ‘Ends of the Earth’ service will find your article anywhere in the world.’

Towards the end of August 2004, the company signed a content distribution agreement with John Wiley & Sons which they estimated ‘will increase the total number of scientific, technical, and medical articles that it can deliver directly through publisher relationships to more than 18 million.’ Subsequently, the company signed agreements enabling article distribution with a further ten leading STM publishers. ‘As a result, Infotrieve can now electronically deliver articles from close to 5300 journal titles from over 130 publishers.’

Finally, early 2005, Infotrieve expanded its partnership with Ingenta enabling the company ‘to provide full-text article searches via its discovery research portals, increasing the depth of discovery resources for Infotrieve customers and generating additional document delivery traffic for Ingenta-hosted publishers’.

- **Ingenta** [www.ingentaconnect.com](http://www.ingentaconnect.com). Very successful document supply operation which now references over 6100 online, 28,500 fax and Ariel software delivered publications. However, in line with perceived changes in the marketplace, now is focusing more in development on tools and processes.
- **SciBASE** [www.thescientificworld.com/DBProducts/sciBASE](http://www.thescientificworld.com/DBProducts/sciBASE) [FEE-BASED]. Access to 22 million citations and 13 million abstracts from over 35,000 scholarly journals and proceedings, thence to the full text of articles,

supplied either by direct article delivery or through Infotrieve’s document delivery service.

### 139 ISI Web of Knowledge

<http://isiwebofknowledge.com> [FEE-BASED]

‘A unique research environment that connects researchers to a wealth of high quality content and powerful array of tools and technologies. ISI Web of Knowledge – one source for quickly and easily discovering essential research information ... A single session is maintained while searching, navigating, and browsing through the various content sources available in ISI Web of Knowledge.’

At the core are two long-standing offerings originally created by the Institute for Scientific Information. First, the citation indexes within Web of Science: ‘Nearly 8500 authoritative, high impact journals covered by Science Citation Index Expanded, Social Sciences Citation Index, and Arts and Humanities Citation Index, plus two Chemistry editions: Index Chemicus, and Current Chemical Reactions’. Second, the CURRENT CONTENTS family of publications: ‘Tables of contents from about 7600 journals and 2000 books; includes links to more than 4300 ISI-evaluated Web sites and over 400,000 searchable, full-text Web documents through Current Contents eSearch’.

This core has been supplemented by other Thomson ISI offerings – including now BIOLOGICAL ABSTRACTS and other BIOSIS offerings; by specialized content provided by various Partners (e.g. CAB ABSTRACTS, INSPEC, FOOD SCIENCE AND TECHNOLOGY ABSTRACTS); and by content from External Collections (e.g. PUBMED, AGICOLA, ARXIV.ORG). In addition, access is provided to a number of the wide range of tools produced by the ISI Research Services Group ([www.isinet.com/rsg](http://www.isinet.com/rsg)), exemplars of which are noted below.

- **Essential Science Indicators** [www.isinet.com/rsg/esi](http://www.isinet.com/rsg/esi) [FEE-BASED]. ‘Analyzes research performance of companies, institutions, countries, and journals; ranks top countries, journals, scientists, institutions and companies by field of research.’
- **High-Impact Papers** [www.isinet.com/rsg/hip](http://www.isinet.com/rsg/hip) [FEE-BASED]. ‘Database of the most influential papers in specific fields of the sciences and social sciences, 1981–2002, as reflected by citation counts tabulated from 1981 through 2003.’
- **In-Cites** <http://in-cites.com/research/2005>. Provides an interesting and useful range of ‘behind-the-scenes’ looks at the scientists, journals, institutions, nations and papers selected by ISI Essential Science Indicators. Updated weekly in SCI-BYTES – the summary of ‘What’s New in Research’.
- **ISI Proceedings** [www.isinet.com/products/citation/proceedings](http://www.isinet.com/products/citation/proceedings). Abstracts of papers delivered at international conferences, symposia, seminars, colloquia, workshops, and conventions. Science and Technology edn indexes about 10,000 conferences a year; collectively gives access to some 2 million papers from 1990.
- **Journal Performance Indicators** [www.isinet.com/rsg/jpi](http://www.isinet.com/rsg/jpi) [FEE-BASED]. Rankings of over 10,000 of the world’s most cited journals including *Citation Impact Statistics*: average citations per paper for all papers and for cited papers published in each journal.
- **Thomson Scientific Solutions** [www.thomsonscientific.com](http://www.thomsonscientific.com). Excellent guide and gateway to the full range of services with news of developments.

### 140 LexisNexis

Reed Elsevier.

[www.lexisnexis.com](http://www.lexisnexis.com) [FEE-BASED]

The flagship product most relevant to STM is labelled LexisNexis at nexis.com: the full text of over 4 billion documents in more than 35,000 individual publications or large groups of sources, subject indexed among 1200 topics

in 36 categories, and delivering comprehensive coverage of all types of worldwide news and business sources, supplemented by in-depth coverage of legal sources.

But there are also a range of more specialized offerings, good examples being:

- LexisNexis environmental: Gathers ‘content from sources not covered in competitive products which focus mainly on journals and newspapers, including: Conference papers and proceedings; Consumer and trade magazines; Newsletters; Law reviews; Environmental codes; Case law; Regulatory agency actions; Federal and state government reports’
- LexisNexis government periodicals index: ‘A unique index to the full spectrum of US government periodicals to facilitate research’
- LexisNexis industry dossier: Provides ‘in-depth information on more than 1000 US industries’
- LexisNexis patent and trademark solutions: Delivers ‘copies of original US, EP, WO, and translated Japanese patent and trademark documents to your desktop’.

However, more recently the company have also developed a number of ‘Integration Tools’, examples being:

- LexisNexis Publisher: An ‘advanced content management tool that offers an easy way to integrate crucial, comprehensive and on-point information to your website, portal, or intranet visitors ... With a single interface, LexisNexis Publisher allows you to tap into a full array of respected news sources’
- Total Search: Here ‘a user can securely and confidentially search their firm’s internal work product when searching any LexisNexis database or file. Users can then easily review and navigate between both internal and LexisNexis results’.

#### 141 **MadSci Network** **Washington University**

[www.madsci.org](http://www.madsci.org)

Free web-based Ask-A-Scientist service based at the University’s Medical School in St Louis. ‘Anyone may submit a question to be answered by people actively engaged in science education and research.’ From 1995 to 2003 the network has received more than 200,000 questions, leading to an online archive of some 25,000 question/answer pairs, viewed during 2003 by more than 6 million people. More than 700 scientists are signed up to answer questions. Early in 2004 the service said that it did not have a critical mass of ‘MadSci-entists’ to answer questions in: anthropology, archaeology, entomology, meteorology, oceanography, palaeontology and psychology; but all other areas of STM seem well provided for.

When looked at 24 February 2005, the home page had been ‘last modified February 30th, 1906’.

#### 142 **MetaLib**

Ex Libris.

[www.exlibrisgroup.com/metilib.htm](http://www.exlibrisgroup.com/metilib.htm)

‘Enables users to access their institution’s e-collections, obtain relevant services, and work in a personalized environment. With MetaLib, an institution can manage today’s hybrid information resources— be they local or remote— under one umbrella. Such resources include, for example, catalogs, reference databases, digital repositories, and subject-based Web gateways. Using the MetaLib portal, library patrons can conduct a MetaSearch™ across heterogeneous resources or link to the resources’ native

interface ... Incorporated in MetaLib is the award-winning SFX technology from Ex Libris. SFX, the OpenURL-compliant link server, provides users with context-sensitive linking to services that their institution has defined and customized on the basis of its e-collections and policies.’

#### 143 **National Information Services Corporation**

[www.nisc.com](http://www.nisc.com)

‘Publishes information products for access through BiblioLine, our Web search service, or on CD-ROM. Some of our abstract and index services are available in print. NISC’s bibliographic and full-text databases cover a wide range of topics in the natural and social sciences, arts and humanities. Some titles provide comprehensive coverage of particular geographic regions, such as Latin America, Africa, South-East Asia or the Arctic and Antarctic.’

‘NISC is dedicated to serving the public with top-quality products at reasonable rates. NISC is the consistent choice of thousands of users in a variety of research settings worldwide. Key to our success is an uncompromising zeal for quality throughout all phases of product production. NISC’s search-and-retrieval software, ROMWright, brings related information from various sources together in a seamless interface – the results from years of listening carefully to what customers want. With a broad selection of titles, thorough data preparation, and one of the most advanced software technologies in the industry, NISC looks forward to becoming the ‘household name’ for both scholarly and lay users around the world.’

#### 144 **OCLC FirstSearch** **OCLC Online Computer Library Center**

[www.oclc.org/firstsearch](http://www.oclc.org/firstsearch) [FEE-BASED]

‘Seamless electronic access to dozens of databases and more than 10 million full-text and full-image articles.’ Covers a very wide range of databases, including versions of a number of major STM offerings: e.g. AGRICOLA; BIOLOGICAL ABSTRACTS; CHEMICAL ABSTRACTS; CSA; INSPEC; MEDLINE. These are underlaid by WORLD CAT, and its functionality can be extended to include other OCLC services such as NETLIBRARY and those below (or they can be subscribed to separately).

- **OCLC ArticleFirst** [www.oclc.org/firstsearch/ordering/subscription](http://www.oclc.org/firstsearch/ordering/subscription) [DESCRIPTION]. Index to the contents pages of some 15,000 journals: title list can be retrieved from this URL.

- **OCLC Electronic Collections Online** [www.oclc.org/electroniccollections](http://www.oclc.org/electroniccollections) [DESCRIPTION]. Full text of more than 5000 titles in a wide range of subject areas, from over 70 publishers of academic and professional journals.

#### 145 **OpenCourseWare** **Massachusetts Institute of Technology**

<http://ocw.mit.edu/OcwWeb/index.htm>

‘A free and open educational resource for faculty, students, and self-learners around the world. OCW supports MIT’s mission to advance knowledge and education, and serve the world in the 21st century. It is true to MIT’s values of excellence, innovation, and leadership.’

‘MIT OCW: Is a publication of MIT course materials; Does not require any registration; Is not a degree-granting or certificate-granting activity; Does not provide access to MIT faculty.’

**146 OVID**

Wolters Kluwer.

[www.ovid.com](http://www.ovid.com) [FEE-BASED]

'An internationally recognized leader of electronic medical, scientific, and academic research information solutions. By providing a customizable suite of content, tools and services, Ovid supports the diverse research needs of its 13 million users worldwide – academic, medical, and corporate professionals and students seeking fast, accurate answers to important questions that help to fuel discoveries, explore topics, or research diagnoses.'

OVID is an especially strong aggregator in the health arena, being owned by WK Health, and 'used across the globe by librarians, researchers, clinicians and students from leading colleges and universities; medical schools; academic research libraries and library consortia; hospitals and healthcare systems; pharmaceutical and other corporate entities; HMOs; and clinical practices. In North America alone, Ovid is used by 93% of medical libraries, 97% of teaching hospitals, and 87% of US hospitals with more than 200 beds, as well as the top 30 pharmaceutical companies.'

- **SilverPlatter** [www.silverplatter.com](http://www.silverplatter.com). Ovid and SilverPlatter became a single company in 2001. 'Future product innovations will focus on the Ovid platform, and customers who rely on SilverPlatter's ERL® and WebSPIRS® (versions 4.0 and higher) have our pledge to continue supporting their work.'

**147 PBS**[www.pbs.org](http://www.pbs.org)

Companion websites for PBS television programs and specials, as well as original web content and real-time learning adventures. The Science and Nature Section is well structured; and topics such as 'Creatures', 'Earth and habitat', 'Technology and inventions' lead seamlessly to more detailed coverage. There is an efficient search mechanism; and PBS Teacher Source provides access to stories and lesson plans, with background resources.

A nice site.

- **Closer To Truth: Science, Meaning, and the Future** [www.closetotruth.com](http://www.closetotruth.com). PBS program that 'brings together leading scientists, scholars and artists to debate latest discoveries and their impact on the human condition'.
- **NOVA** [www.pbs.org/wgbh/nova](http://www.pbs.org/wgbh/nova). 'Seen in more than 100 countries, NOVA is the most watched science television series in the world and the most watched documentary series on PBS ... (It has) won every major television award, most of them many times over.'
- **SciTechDaily** [www.scitechdaily.com](http://www.scitechdaily.com). Intensive but well laid out coverage of breaking news together with excellent list of links to over 100 leading sci/tech publications and websites that are especially useful for keeping up-to-date.

**148 ProQuest Information and Learning**[www.il.proquest.com](http://www.il.proquest.com)

ProQuest arose primarily from University Microfilms (then UMI), acquired by Bell & Howell in 1985, and then in 2001 becoming the ProQuest Company. In June 2004, the company was named one of the top 100 Fastest Growing Tech Companies by Business 2.0 Magazine.

'As a result of agreements with more than 9000 publishers worldwide, ProQuest Information and Learning provides access to information from periodicals, newspapers, out-of-print books, dissertations, and scholarly collections in various formats. Our archive includes more than 5.5 billion pages of information, spanning 500 years of scholarship, in formats that range from print to microform to digital.

'Disciplines covered include earth, life, physical, medical, and applied sciences. Coverage is front-to-back full-text, as well as full-page image and Text+Graphics to reproduce images and diagrams exactly as they appeared in the original publication.'

See also ONLINE DISSERTATION SERVICES and PROQUEST DIGITAL DISSERTATIONS.

- **ABI/INFORM** [www.il.proquest.com/products/pt-product-ABI.shtml](http://www.il.proquest.com/products/pt-product-ABI.shtml). The leading full-text, bibliographic database containing information on worldwide business and management issues including, for instance, for technology and engineering, environment, health care, information technology and communication, and so on.
- **Controlled Vocabulary of Subject Terms** Downloadable PDF, 498pp. [www.umi.com/proquest/cv-controlled-vocabulary.shtml](http://www.umi.com/proquest/cv-controlled-vocabulary.shtml). Detailed regularly updated thesaurus-based (i.e. includes: broader terms; related terms; used for terms) listing of descriptors used for searching subject fields in ProQuest databases.
- **XanEdu** [www.xanedu.com](http://www.xanedu.com). Customized print and digital course packs.

**149 QuestionPoint****OCLC Online Computer Library Center**[www.oclc.org/questionpoint](http://www.oclc.org/questionpoint)

Virtual reference service 'supported by global network of co-operating libraries worldwide, as well as an infrastructure of software tools and communications'. The member profile of each library indicates subject and language strengths, hours of service, number of questions can be responded to weekly, etc. Software then finds a best-match of institutions most likely to answer questions submitted. Users can submit questions by form or by talking to a librarian 'using interactive technology like chat, Voice over IP and video'.

**150 Reference Universe**

Paratext.

[www.paratext.com/ru\\_intro.htm](http://www.paratext.com/ru_intro.htm)

'Reference Universe is the bridge between your library's printed reference collection and specialized online reference databases – a single search through more than 5000 authoritative subject encyclopedias, linked to each library's local holdings.'

'Highly recommended. All levels ... a rich source of information, providing unique access to print reference sources' (*Choice*)

'Paratext has taken its searching functionality to a new level of integration with local library catalogs ... Because each query against the library catalog occurs in real time, the holdings information is always current. Now that's pretty slick.' (*American Libraries*)

**151 Resource Discovery Network [UK]****Joint Information Systems Committee**[www.rdn.ac.uk](http://www.rdn.ac.uk)

'A collaboration of over seventy educational and research organisations, including the NATURAL HISTORY MUSEUM and the BRITISH LIBRARY. In contrast to search engines, the RDN gathers resources which are carefully selected, indexed and described by specialists in our partner institutions. You can be confident that your search results and browsing will connect you to Web sites relevant to learning, teaching and research.'

Four of the eight broad 'Hubs' of the RDN are germane to STM: BIOME; EEVL; GESOURCE; and PSIGATE. Each has (competitively) developed its own identity with many services and products adding value to the basic directory.

Centrally, the Network has been an early adopter of newer technologies such as OAL, RSS, and SOAP. The pace of

development has slackened recently: JISC, as many other similar funding bodies, is critically reviewing the long-term future of resource-intensive services such as the RDN within the evolving information universe. But at least for the foreseeable future the Network and its Hubs will continue to be major players in the e-learning landscape.

- **BUBL Information Service University of Strathclyde.** [www.bubl.ac.uk](http://www.bubl.ac.uk). Good well established service providing resource descriptions categorized by DEWEY DECIMAL CLASSIFICATION. Not updated so frequently in the last year or so, as formerly. Now housed within the University's Centre for Digital Library Research.
- **The ePrints UK Project** [www.rdn.ac.uk/projects/eprints-uk](http://www.rdn.ac.uk/projects/eprints-uk). Developing series of national, discipline-focused services through which the higher/further education community can access collective output of e-print papers available from compliant Open Archive repositories, especially in UK universities and colleges.
- **RDN Virtual Training Suite Institute for Learning & Research Technology.** [www.vts.rdn.ac.uk](http://www.vts.rdn.ac.uk). Generally excellent free online tutorials designed to help students, lecturers and researchers improve their internet information literacy and IT skills. UK Higher Education exemplars are referenced elsewhere; there is also a set for Further Education.

**152 Science, Engineering and Technology Learning Information Portal: e-lip** [UK]  
**LearnDirect and Science, Engineering, Manufacturing Technologies Alliance**

[www.elip.info](http://www.elip.info)

'Welcome to the one stop source of information and learning opportunities for the Science, Engineering and Manufacturing Technologies community in the UK! E-lip is brought to you by a partnership led by SEMTA and Learndirect, for information on the partnership please click on partners below.'

- **Science, Engineering, Manufacturing Technologies Alliance** [www.semta.org.uk](http://www.semta.org.uk). UK Sector Skills Council covering 'some 100,000 companies employing 2,500,000 people in the UK.' Provide training and lifelong learning services; carries out sectoral research; oversees occupational standards and qualifications, etc. Extensive website.

**153 ScienceDirect**

Elsevier.

[www.sciencedirect.com](http://www.sciencedirect.com) [FEE-BASED]

'Welcome to the world's largest electronic collection of science, technology and medicine full text and bibliographic information.'

Contains the full text with tables, figures and photographs of over 5 million articles from Elsevier and some other publishers' ranges of STM journals. Also gives access to encyclopedias and other reference works and some databases. Extensive search capabilities allow full text and bibliographic searching.

The service ContentsDirect (<http://contentsdirect.elsevier.com>) is a free e-mail alerting service which delivers directly to the desktop journal tables-of-contents and abstracts for Elsevier journals, and book tables-of-contents for forthcoming Elsevier books. 'All articles listed in the ContentsDirect email alerts, link directly to the article's abstract and full text in ScienceDirect. Please note that for full text you must either have an institute subscription to ScienceDirect or buy the article via Pay per View'.

- **Elsevier Science and Technology Books** <http://books.elsevier.com>. Useful subject-categorized gateway to full range of S & T titles under the imprints: Academic Press; Butterworth-Heinemann; Digital Press; Focal Press; Gulf Professional Publishing; Morgan Kaufmann; Newnes; Pergamon; Syngress – as well as Elsevier itself.

■ **ScienceDirect Librarian Services Site**

[www.info.sciencedirect.com](http://www.info.sciencedirect.com). Excellent guide and gateway to the full range of services with news of developments.

- **Scirus** [www.scirus.com](http://www.scirus.com). Free of charge engine described as searching over 167 million science-specific web pages: not just scientific journals, but also unpublished research, university websites, corporate internet sites, conference agendas/minutes, discussion groups, etc.
- **SCOPUS** [www.scopus.com](http://www.scopus.com). Launched late 2004 with 13,000 journals, 4000 publishers and 5 years of backfiles. 'We are aiming for the broadest content possible, with more journals than ISI and more types of document – conference proceedings, books, series and reference works.'

**154 The Scout Report** [USA]  
**Internet Scout Project and University of Wisconsin**  
<http://scout.cs.wisc.edu/Reports/ScoutReport>

'The Scout Report is the flagship publication of the Internet Scout Project. Published every Friday both on the web and by email, it provides a fast, convenient way to stay informed of valuable resources on the Internet. Our team of professional librarians and subject matter experts select, research, and annotate each resource.'

The premier US-based service within academia. It has very good evaluative descriptions of each new resource. The Archives 'is a searchable and browsable database to over nine years' worth of the Scout Report and subject-specific Scout Reports. It contains 16,969 critical annotations of carefully selected internet sites and mailing lists' (early 2005). Resource summaries are assigned detailed LIBRARY OF CONGRESS SUBJECT HEADINGS, supplementing 'keyword' and 'advanced' search facilities. However, it is not possible easily to browse among descriptions arranged in a subject hierarchy, and the search software seemed not the easiest to use.

Three enhanced subsets of the Report are currently available: NSDL SCOUT REPORT FOR PHYSICAL SCIENCES; NSDL SCOUT REPORT FOR LIFE SCIENCES; and NSDL SCOUT REPORT FOR MATH, ENGINEERING, AND TECHNOLOGY.

A number of the resources described in the database are now out-of-date or no longer accessible: as with other similar services, it is difficult to get the balance right between coverage of the new and updating of the old. Nevertheless, the Report is certainly well worth subscribing to (free of charge), and using.

**155 Springer**

[www.springeronline.com](http://www.springeronline.com)

Good well structured and laid-out portal giving access to electronic and printed literature from Springer-Verlag plus a growing roster of other publishers, including Urban and Vogel, Steinkopff, Birkhäuser, and now Kluwer Academic. Free access is provided to search functions, tables of contents, as well as keyword and tables of contents alerts.

The online gateway SpringerLink now covers more than 1200 journals, with its content organized into a series of 'online libraries', each of which covers a separate subject category: Behavioural sciences; Biomedical and life sciences; Business and economics; Chemistry and material science; Computer science; Earth and environmental sciences; Engineering; Humanities, social sciences and law; Mathematics; Medicine; Physics and astronomy.

In a relatively new service Springer Open Choice, 'the author decides how he or she wants to be published in the leading and most respected journals in the scientific community. Springer still offers, and recommends, the traditional publishing model as a time-tested way of

guaranteeing editorial quality and independence, but now also offers authors the option to pay to have their journal articles made available for free to anyone, anywhere in the world.'

## 156 STN International

[www.stn-international.de](http://www.stn-international.de) [FEE-BASED]

A consortium of the AMERICAN CHEMICAL SOCIETY, JAPAN SCIENCE AND TECHNOLOGY AGENCY and FIZ Karlsruhe which provides access to a broad spectrum of fee-based bibliographic, factual and full-text databases in science and technology. Currently encompasses more than 220 electronic databases covering some 400 million documents with especial emphasis on patent-related information.

There are several interfaces available for the STN databases, including STN Express, a Windows-based, menu-driven software package that allows graphic structure input to assist the searcher; STN Easy, a forms-based interface; and STN on the Web, which combines STN command language functionalities with advanced web technology.

- **FIZ Karlsruhe** [www.fiz-karlsruhe.de](http://www.fiz-karlsruhe.de) [FEE-BASED]. Operates STN in Europe. Also produces databases in energy, nuclear research and technology, crystallography, plastics, mathematics, computer science and physics – accessible via the internet, proprietary networks or in printed form.
- **NumeriGuide** <http://info.cas.org/ONLINE/DBSS/numeriguiddess.html>. Information on all of the numeric properties available in each numeric file on STN, including: appropriate terminology for each property, property definition, files where the property may be searched, and default units for the property in each file.

## 157 T&F Informa

[www.tfinforma.com](http://www.tfinforma.com)

Company formed in May 2004 following the merger of Informa Group plc and Taylor & Francis Group plc and now publishing collectively more than 2000 journal and subscription products, and with a combined book backlist of over 35,000 volumes.

Some examples of environments offered by the two Groups at the time of merger are referenced below and elsewhere within TNW. Reviews of these sites reveals that Informa have been more active in this arena than Taylor & Francis – though with the T&F acquisition just prior to merger of CRC Press and Dekker during 2003 this was already no doubt set to change.

However, we must now anticipate development by the new conglomerate of the types of more sophisticated integrated environments typical of other large players in the marketplace such as those cited within this section from Elsevier, McGraw-Hill, Thomson, and Wiley.

- **CRCnetBASE** [www.crcnetbase.com](http://www.crcnetbase.com). URL leads to subject-focused searchable CRC full-text book collections: e.g. BIOTECHnetBASE, CivilENGINEERINGnewBASE, FOODnetBASE, NEUROSCIENCEnetBASE and so on. Generates PDF version of each book section retrieved.
- **Dekker.com** [www.dekker.com](http://www.dekker.com). Rapid and relatively sophisticated access to the content of Dekker's books, journals and encyclopedias. Searching is free of charge; access to full-text charged. A pleasant service to use.
- **s@ra: Scholarly Articles Research Alerting** [www.tandf.co.uk/sara](http://www.tandf.co.uk/sara). Free of charge e-mail alerting service of forthcoming articles, covering 950 journals published by the company.
- **Taylor & Francis eBookstore** [www.ebookstore.tandf.co.uk](http://www.ebookstore.tandf.co.uk). Includes imprints from Brunner-Routledge, Europa Publications, Garland, Spon Press, Psychology Press and Routledge as well as T&F itself. Covers over 7000 titles with a Library subscription package available.

## 158 Thomson Learning

[www.thomson.com/learning](http://www.thomson.com/learning) [FEE-BASED]

One of the four Thomson Market Groups which 'is among the world's largest providers of tailored learning solutions'.

'In the academic marketplace, we serve secondary, post-secondary and graduate-level students, teachers, and learning institutions in both traditional and distance learning environments. In the professional and corporate training marketplaces, we offer adult education and certification materials for corporations, training centers and individuals.'

'For all of our customers, we help them find a total learning solution by offering courseware, test preparation, testing, assessment, and certification. Our products and services are sold throughout the world, through direct channels and via a worldwide network of distributors.'

- **Book Review Index Online Plus** Thomson Gale. [www.galegroup.com](http://www.galegroup.com) [DESCRIPTION]. Product developed from the well established print and online Book Review Index which now includes more than 5 million review citations; it also includes more than 634,000 full-text reviews from Gale's InfoTrac family of products.
- **InfoTrac** <http://infotrac.thomsonlearning.com> [FEE-BASED]. 'Offers over 15 million full-text articles from over 5000 scholarly and popular periodicals. Articles cover a broad spectrum of disciplines and topics – ideal for every type of researcher.' Access is available 24/7 on any computer with internet access.
- **Thomson Delmar Learning** [www.delmarlearning.com](http://www.delmarlearning.com). Books, software, videos and online training materials focussed on the career education, healthcare, technology and trades markets.
- **Thomson Gale** [www.galegroup.com/Sitemap.htm](http://www.galegroup.com/Sitemap.htm). The well established provider of a range of reference and full-text products and services via libraries. The Site Map at the website provides access to details of each type of offering, many examples of which are referenced elsewhere in TNW.

## 159 The Virtual Reference Desk

[www.vrd.org](http://www.vrd.org)

'Digital reference, or 'AskA', services are Internet-based question-and-answer services that connect users with experts and subject expertise. Digital reference services use the Internet to connect people with people who can answer questions and support the development of skills.' The *VRD Network* supplements AskA services 'by accepting out-of-scope and overflow questions. When a subject specific service receives questions which are out of its stated scope area, it can forward those questions to the VRD Network for assistance.' Listed are about two dozen Network participants; but more useful is the extensive subject classified list of AskA services – 'a database of high-quality 'AskA' services designed to link students, teachers, parents and other K-12 community members with experts on the Internet' – and many with intriguing titles such as Ask a Hurricane Hunter (53rd Weather Reconnaissance Squadron, US Air Force Reserve), Ask Dr. SOHO (NASA's Solar and Heliospheric Observatory), Go Ask Alice! (Columbia University's Health Education Program), The Wild Ones (The Wildlife Preservation Trust International).

## 160 Wikipedia: The free encyclopedia

Wikimedia Foundation.

<http://en.wikipedia.org>

A brilliant free content encyclopedia being written collaboratively by contributors from around the world. The site is a wiki, which means that anyone can edit articles, simply by clicking on the edit link that appears at the top of each page ...

'Wikipedia began on January 15, 2001 by founders Jimmy Wales, Larry Sanger, and a few enthusiastic English-language collaborators. Four years later, as of December 2004, there were 13,000 active contributors working on over 1,300,000 articles in more than 100 languages. As of today [25 February 2005], there are 481,332 articles in English; every day hundreds of thousands of visitors from around the world make tens of thousands of edits and create thousands of new articles.'

## 161 Wiley InterScience

[www3.interscience.wiley.com](http://www3.interscience.wiley.com) [FEE-BASED]

Web-based access to 'over 1000 journals, major reference works, online books, current protocols laboratory manuals, and databases as well as a suite of professional and management resources. The site was launched in 1997 and currently caters to over 12 million users in 87 countries'. There are a wide range of individual, institutional and society electronic licensing options plus the opportunity of pay-per-view.

For the online reference works, they offer the 'One Time Purchase Option': 'Take advantage of one-time funding and non-subscription funds to pay for permanent electronic access to titles and content your users need. The one-time purchase option includes archival access. This is consistent with traditional sources of funding for the print versions of these products.' Alternatively, an Annual Subscription License: 'Provides access to the active version of a reference work, plus to any content added or updated during the term of the subscription. The licensee must continue to subscribe each year in order to retain access to any of the content. Archival access will no longer be offered as a feature of the annual subscription license option.'

For the individual researcher, Wiley offers Roaming Access: 'Frees researchers from the confines of their institution's IP address range. Activated via a link in My Profile, it enables remote password access to full-text licensed content from any laptop or web-enabled computer in the world. Converting the global office into a working reality, Roaming Access is available exclusively to Registered Users affiliated with an Enhanced Access License Customer.'

These are just two examples of the very good range of facilities available within this extensive portal.

## 162 WilsonWeb

H W Wilson.

[www.hwwilson.com](http://www.hwwilson.com) [FEE-BASED]

Leading provider of traditionally library-based indexing and abstracting services, especially targeting the less specialist college, school and public library markets. But have now developed a range of valuable full-text databases, following a major overhaul in 2002, including the integration of SFX linking technology, OPAC links, and multifile searching.

A goodly number of Wilson databases are referenced elsewhere in TNW.

### ■ Book Review Digest Plus

[www.hwwilson.com/databases/brdig.htm](http://www.hwwilson.com/databases/brdig.htm). Indexes and provides excerpts of reviews of current English-language fiction and non-fiction. In 2003 expanded its scope (from its former base of 109 periodicals) with entries drawn from thousands of periodicals covered by other WilsonWeb databases.

## 163 World Book Online Reference Center

World Book Inc.

[www.worldbookonline.com](http://www.worldbookonline.com) [FEE-BASED]

'Encyclopedic database of more than 25,400 articles ... 248,000 definitions of words ... and a media database of 9300 audios, 11,000 illustrations including 1480 maps, 128 panoramic photographs, and 115 videos and animations.'

Based on the highly recommended 22 volume *World Book Encyclopedia*. Supporting online services include Parent Resource Center, School and Library Resource Center, and Student Resource Center.

The company produces a wide variety of well reviewed reference works, primarily aimed at the school educational marketplace, and examples of which are given below.

■ **Biographical encyclopedia of scientists 2003** \$339.00. 8 v. More than 1300 alphabetically arranged biographies are combined with over 700 photographs and illustrations.

■ **Science Year in Review Annual.** \$34.99 [2003]. Summary of the important research, discoveries, and breakthroughs during the year. *American Reference Books Annual* called the Volume 'an excellent addition to school and public libraries'.

■ **World Book Research Libraries** Collection of more than 5000 complete books and some 175,000 documents across the whole of recorded knowledge, including from leading scientists: Darwin, Einstein, Newton, etc.

## Discovering print & electronic resources

### 164 About.com

<http://azlist.about.com/a.htm>

'Each site in our unique network is run by a professional Guide who is carefully screened and trained by About. Guides build a comprehensive environment around each of their specific topics, including the best new content, relevant links, How-to's, Forums, and answers to just about any question.'

This is the well known service whose commercially intensive features can be intrusive, at least for some users. However, there are pleasant inviting page structures with good use of graphics and efficient search and navigation features. The subject entries on the Site A-Z clearly are 'consumer' rather than 'academically' driven; but About is worth remembering when access is needed to relatively less scholarly disciplines and material.

### 165 Academic360.com

Internet Employment Linkage, Inc.

[www.academic360.com](http://www.academic360.com)

'A meta-collection of Internet resources that have been gathered for the academic job hunter. It includes links to faculty, staff, and administrative announcements and is not restricted to teaching positions.' Useful.

### 166 All that JAS: Journal Abbreviation Sources

G. McKiernan, comp.; Iowa State University

[www.public.iastate.edu/%7ECYBERSTACKS/JAS.htm](http://www.public.iastate.edu/%7ECYBERSTACKS/JAS.htm)

'Categorized registry of Web resources that list or provide access to the full title of journal abbreviations or other types of abbreviated publication titles (e.g., conference proceedings titles). Selected OPACs that offer abbreviated title searching have also been included. In addition ... Includes select lists and directories that provide access to the unabbreviated titles of serial publications.'

Good, regularly updated, and valuable compilation produced by University's Associate Professor and Science and Technology Librarian and Bibliographer.

■ **LiveRef(sm): A Registry of Real-Time Digital Reference Services** G. McKiernan, comp.

[www.public.iastate.edu/~CYBERSTACKS/LiveRef.htm](http://www.public.iastate.edu/~CYBERSTACKS/LiveRef.htm). Covers chat

software, live interactive communications utilities, call centre management software, customer interaction management software, web contact centre software, bulletin board services, interactive customer assistance system, etc. Updated 2003.

■ **Web Feeds from Electronic Journals**

[www.public.iastate.edu/~CYBERSTACKS/eFeeds.htm](http://www.public.iastate.edu/~CYBERSTACKS/eFeeds.htm). Developing categorized registry of electronic journals that offer RSS/XML, Atom, or other web feeds. Publisher-specific and vendor web feeds are categorized in a separate category. Updated January 2005.

**167 Alternative Press Index**

Alternative Press Center, Quarterly. \$400.00 [2005]. ISSN 0002662X. [www.altpress.org/api.html](http://www.altpress.org/api.html) [DESCRIPTION]

'Subject index to over 250 alternative, radical and left periodicals, newspapers and magazines. Librarians consider the API to be the most comprehensive and up-to-date guide to alternative sources of information available today.' Contains nicely annotated list of sources plus links to other sources of 'alternative' material. Naturally stronger in social sciences and arts and humanities sources; but reasonable number of STM-related serials.

Available online: see website.

**168 Bibliographic guide to conference publications**

G.K. Hall, Annual. 2 v., \$660.00 [2002]. ISBN 0783897987.

'Lists recent publications catalogued during the past year by The Research Libraries of the NEW YORK PUBLIC LIBRARY and the LIBRARY OF CONGRESS ... Contains proceedings, reports, and summaries of conferences, meetings, and symposia in all fields, as well as collections or partial collections of papers presented at conferences. Conference publications from all countries and in all languages are represented.'

**169 China National Knowledge Infrastructure**

East View Online Services.

[http://online.eastview.com/cnki\\_login/index.jsp](http://online.eastview.com/cnki_login/index.jsp) [FEE-BASED]

Gateway to a range of products and services.

■ **China Scientific Book Services** Huayu Nature Book Trade Co.

Ltd.. [www.hceis.com](http://www.hceis.com). Commercial book supply service. Useful subject classified browsing of descriptions of titles.

**170 Directory of Open Access Journals**

Lund University

[www.doaj.org](http://www.doaj.org)

Compilation which covers 'free, full text, quality controlled scientific and scholarly journals': 1463 entries February 2005. Quite detailed subject browse structure: for instance, within Technology and Engineering there was 'Chemical Technology' (2 journals); 'Construction' (4); 'Materials' (4) and other small sub-categories (but with 'Computer Science' having 45 journals listed). The service is co-funded by the OPEN SOCIETY INSTITUTE and SPARC and is hosted at the University's Libraries Head Office.

'Open access journals' are defined as 'journals that use a funding model that does not charge readers or their institutions for access.'

■ **Open Access News: News from the open access movement** P. Suber, comp.

[www.earlham.edu/~peters/fos/fosblog.html](http://www.earlham.edu/~peters/fos/fosblog.html). 'The main purpose of this blog is to gather and disseminate news about the open-access movement, and to harness the energy and knowledge of a wide group of contributors in doing so ... Contributors to this blog speak as individuals ...'

■ **Washington DC Principles for Free Access to Science**

[www.dcprinciples.org](http://www.dcprinciples.org). 48 not-for-profit publishers and learned societies announced their partial commitment to open access.

**171 Discovery.com**

Discovery Communications Inc.

[www.discovery.com](http://www.discovery.com)

'Popular' Site, linked to the various Discovery TV Channels, with wide range of browsable content: e.g. 'Mission to Mars'; 'Dinosaurs on Parade'; 'Living World: What makes it tick?' were samples on the Science Channel in 2004. There is also Animal Planet and Discovery Health. References to lots of STM Resources tucked away; but there are generally more efficient, less commercialized (though for some less enjoyable) ways of getting at those than here.

**172 ECHO: Exploring and Collecting History Online – Science, Technology, and Industry**

George Mason University

<http://echo.gmu.edu>

'More than ninety percent of all scientists who have ever lived are alive today. It is the goal of ECHO to record their stories and the ever-expanding, ever-accelerating history of recent science and technology using a contemporary technology well suited to such a daunting yet critical task: the Internet.'

Attractive, engaging, well laid out resource. The Virtual Center incorporates the WWW Virtual Library for the History of Science, Technology and Medicine established in 1994. Maintained by the University's Center for History and the New Media.

**173 EconLit**

American Economic Association

[www.econlit.org/accesslist.html](http://www.econlit.org/accesslist.html) [FEE-BASED]

As would be expected, there is a strong economic focus. But the subject categories include: Health, education and welfare; Economic development, technological change, and growth; Agricultural and natural resource economics.

Covers books, working papers and dissertations, as well as journal articles. The URL lists the companies which provide library and institutional subscriptions to EconLit, where it is noted that all offer the capability of linking its records to full-text electronic articles.

**174 Fulltext Sources Online: For periodicals, newspapers, newsletters, newswires and TV/radio transcripts**

Information Today, 2003/2004, Biannual. \$219.50. ISBN 1573871826. [www.fso-online.com](http://www.fso-online.com)

Well established directory of periodicals accessible online in full text through about two dozen aggregators, and now listing over 22,000 newspapers, journals, magazines, newsletters, newswires, and transcripts. Each issue is complete and replaces previous issues. The aggregators whose products are included are a good checklist of leading players in this marketplace: Dialog, EBSCOhost, Eureka, Europresse, Factiva, FirstSearch, Fpinfoformart, GBI, Genios, HeinOnline, InfoTrac, InSite, Lexis, NewsBank, NewsScan, NewsLibrary, Nexis, NNI, Ovid, Pressed, Profound, ProQuest, Quicklaw, STN, Telecom21, Westlaw, and WilsonWeb – the majority of which are referenced elsewhere in this text.

Non-subscribers can search for free – a useful service in itself; but one has to be a registered user to display the full record resulting from a search. That full record includes for each title data on the aggregators and their specific databases which contain the publication online in full text, with: dates of coverage; ISSN, geographic location, language, and URL of the publication; notations for the frequency and

lag times of the title appearing online; and whether or not coverage is 'Selected'.

An excellent service.

### 175 Gale Directory of Databases

Thomson Gale, 2004, Biannual. \$515.00. ISBN 0787669040.

[www.galegroup.com](http://www.galegroup.com) [FEE-BASED]

The premier established tool profiling thousands of databases available worldwide in a variety of formats. Entries include producer name and contact information, description, cost and more. Each edition is comprised of two volumes: v. 1. Online Databases; v. 2. CD-ROM, Diskette, Magnetic Tape, Handheld and Batch Access Database Products. Good descriptions and comprehensive indexes.

Also available online through DIALOG.

### 176 Genamics JournalSeek

Genamics/Openly Informatics.

[www.journalseek.net](http://www.journalseek.net)

'The largest completely categorized database of freely available journal information available on the internet. The database presently contains 75,602 titles. Journal information includes the description (aims and scope), journal abbreviation, journal homepage link, subject category and ISSN. Searching this information allows the rapid identification of potential journals to publish your research in, as well as allowing you to find new journals of interest to your field. The database does not contain articles or abstracts.'

Very useful compilation, easy and efficient to use, with a good detailed subject categorization – though as so often in such compilations updating can be a problem.

Of particular interest here is the List of Publishers, each publisher name provided with a link to its website, and with the entries classified into 'Minor' (1–2 titles), 'Small' (3–29), 'Medium' (30–100) and 'Large' (more than 100 journals: 20 entries, with Elsevier Science scoring at the time of sampling 2036 titles, Kluwer Academic Publishers + Springer 1438, Taylor & Francis Group 1006, Blackwell's 792). The categorizations do not necessarily take account of the extensive ownership of imprints by such as Reed Elsevier (for instance, some of the other entries in the 'top 20' being owned by that conglomerate). Nevertheless, the database provides a valuable snapshot of the current state of the STM journal publishing market, and of that of journal publishing more generally.

■ **Books and Periodicals Online** Library Technology Alliance Ltd. <http://booksandperiodicals.com> [DESCRIPTION]. Directory of sources available online: Alphabetical and keyword look up of over 146,000 titles; web links to over 4500 full text sources; Over 57,120 full text sources identified; Journals also included when only available in abstracts or citations.

■ **New Jour** <http://gort.ucsd.edu/newjour>. Very useful listing of new e-journals and e-newsletters. Regularly updated. Archival searching (15,541 titles, 28 February 2005).

### 177 GreyNet: Grey Literature Network Service

TextRelease.

[www.greynet.org](http://www.greynet.org)

Good entrée to the grey literature field. The Network organizes the International Conference Series on Grey Literature, creates and maintains the list of web-based resources, and oversees a moderated Listserv. GreySource is a subject classified list of resources, and GreyText an in-house archive of documents, on grey literature. The term 'grey literature' was defined in 1997 at a Luxembourg

Convention as 'information produced on all levels of government, academics, business and industry in electronic and print formats not controlled by commercial publishing'.

■ **SIGLE** Multidisciplinary database, approximately 1/3 pure sciences, 1/3 technology, 1/3 economics, social sciences and humanities. Circa 900,000 records, 2004. Accessible via a range of Hosts.

■ **Information sources in grey literature** P. Auger 4th edn, K G Saur, 1998, 177pp. €88.00. ISBN 3598244274. 'Fully revised to reflect all recent developments and expanded to include substantial amounts of new material, with sections on the Internet and the European Union.'

■ **Managing Access to Grey Literature Collections: MAGiC Cranfield University.** [www.magic.ac.uk/links/links1.html](http://www.magic.ac.uk/links/links1.html). Project that aimed to establish a new collaborative system for the collection, storage and utilization of engineering grey literature. Website gives still useful annotated list of related links.

### 178 A guide to field guides

D. Schmidt Libraries Unlimited, 1999, 304pp. \$68.50. ISBN 1563087073.

[www.library.uiuc.edu/bix/fieldguides/main.htm](http://www.library.uiuc.edu/bix/fieldguides/main.htm) [COMPANION]

'Focusing on the North American continent, this book, the first of its kind, identifies and describes major field guides in all scientific subject areas (from plants, animals, and insects to astronomy and weather, geology and fossils, and man-made objects). Organized by topic, it offers complete bibliographic information and descriptions of more than 1300 field guides.' The companion website extends the international coverage of the print volume.

### 179 Guide to reference books

R. Balay, ed. 11th edn, American Library Association, 1996, 2040pp. \$275.00. ISBN 0838906699.

[www.haverford.edu/library/grb](http://www.haverford.edu/library/grb) [DESCRIPTION]

The premier US-based guide, providing evaluative descriptions of 15,875 English- and foreign-language reference works organized within five major parts: general reference; humanities; social and behavioural sciences, history and area studies; science, technology, and medicine. The 12th edition – to be called *Guide to Reference Sources* to denote its format neutrality – is in preparation under the general editorship of Robert Kieft.

### 180 Handbooks and tables in science and technology

R.H. Powell 3rd ed, Oryx Press, 1994, 368pp. ISBN 0897745345.

A bibliography of older handbooks and other useful printed data sources in science, technology and medicine. Handbooks can be located by subject keyword and by author or editor. Entries give bibliographic information and a short annotation.

'Mr Powell's book will unlock many valuable sources of information lining the shelves of the average science reference collection ... Remarkably comprehensive and easy-to-use reference tool. It is also a valuable aid to collection development ... highly recommended.' (*Medical Reference Services Quarterly*)

### 181 Index to Theses [UK]

Expert Information, Quarterly. £400.00 (print + online). ISSN 09572724.

[www.theses.com](http://www.theses.com) [FEE-BASED]

Bibliographic details of all theses produced by British and Irish universities, the earliest dated 1716. Each title is classified into one of over 300 subdivisions of eleven main subject areas. Author and subject indexes are also provided. The Index only includes abstracts; but full text of most

created since the early 1980s is available from the British Library's service.

■ **British Thesis Service** British Library. [www.bl.uk/britishtesis](http://www.bl.uk/britishtesis) [FEE-BASED]. Access to the full text of more than 170,000 doctoral theses, mainly from the 1970s to the present day. Almost all UK universities make their theses available through the Service.

## 182 Infomine

University of California.  
[infomine.ucr.edu](http://infomine.ucr.edu)

Virtual library of internet resources designed for staff and students at university level. INFOMINE celebrated its tenth anniversary in 2004.

It was 'one of the first Web resources of any type offered by a Library. It was also one of the first Web-based, academic virtual libraries as well as one of the first to develop a system combining the advantages of the hypertext and multi-media capabilities of the Web with those of the organizational and retrieval functions of a database manager. We now include focused, automatic Internet crawling as well as automatic text extraction and metadata creation functions to assist our experts in content creation and users in searching. Many of INFOMINE's important features and services ... remain unique among Internet resource collections.'

The service provides access to records of resources such as databases, electronic journals, electronic books, bulletin boards, mailing lists, online library card catalogues, articles, directories of researchers, etc. Currently contains over 100,000 links (26,000 librarian created links and 75,000 plus robot/crawler created links).

## 183 Information sources in science and technology

**C.D. Hurt** 3rd edn, Libraries Unlimited, 1998, 346pp. \$45.00. ISBN 1563085283.

'Introduces readers to the breadth of information sources in the fields of science and technology as well as to their applications.'

*Series: Library and Information Science Texts.*

'An extremely useful source for academic libraries and researchers, especially in choosing current resources in science and technology, including Internet resources.' (*Choice*)

'Would make an excellent textbook for a library school ... Or a good collection development guide for an academic science and engineering library ... A good compact guide to the current literature of science and engineering.' (*E-STREAMS*)

## 184 International Bibliography of the Social Sciences

[www.lse.ac.uk/collections/IBSS](http://www.lse.ac.uk/collections/IBSS) [FEE-BASED]

Worth considering for STM queries that have more of a social science bias. The Subject Coverage section of the lists the relevant journals covered for: 'Agriculture'; 'Environment'; 'Health'; 'Psychology'; 'Science and Technology'; and 'Statistics'. Note that 'all works included in the IBSS print volumes are analytical or theoretical, and make use of new ideas or new materials. Works such as textbooks, newspapers and news magazines are excluded, as are previously published works.'

## 185 International government information and country information: a subject guide

**A.M. Morrison and B.J. Mann** Greenwood Press, 2004, 312pp. \$65.00. ISBN 1573564796.

'This is the only authoritative guide that offers a subject approach to the plentiful resources provided by international

government organizations, national governments, and other foreign information sources. Although many of the resources described in this book are freely available on the Internet, finding or using them can be difficult.'

## 186 The Internet Public Library

[www.ipl.org](http://www.ipl.org)

Clearly organized and displayed descriptions of web-based resources, usefully separating out from other resources: newspapers; magazines, journals, E-zines, etc.; associations on the net. Good quite detailed subject categorization, including – e.g. within 'Science and Technology' – the categories 'Controversial', 'Science and Technology News' and 'Science and Technology Libraries' alongside the subject disciplines. Limited site search facilities.

Also, various other facilities such as a nice series of Pathfinders: 'Home-grown guides written by IPL staff which are intended to help you get started doing research on a particular topic, both online and at your local library': e.g. 'Endangered Species'; 'Medical Sources and Information'; and Ask a Question – with hundreds of the most popular questions and answers listed on the Frequently-Asked Reference Questions pages.

The site is 'a public service organization and a learning/teaching environment at the University of Michigan School of Information' – but they 'are actively seeking support, either in the form of funding, equipment, or help'.

## 187 Japan Publications Guide Service: JPGSONline

Japan Publications Guide Service.

<http://jpgsonline.com>

'Collects and catalogs information on currently available English books, periodicals, other publications and information products that are published in, on, or for Japan and East/Southeast Asia.'

## 188 Librarians' Index to the Internet

University of California, Berkeley

<http://lii.org>

Mission is 'to provide a well organized point of access for reliable, trustworthy, librarian-selected Internet resources, serving California, the nation, and the world'. LII is a 'searchable, annotated subject directory of more than 12,000 Internet resources selected and evaluated by librarians for their usefulness to users of public libraries'.

Very good, browsable collection for relatively high-level non-technical queries – with a nice feature: 'last updated on [Date]': 'An active weeding program keeps us current – while sites change and die all the time, LII almost never has more than 100 'dead' sites.'

The service – although still hosted at Berkeley – is 'funded through the (annual) Library Services and Technology Act, with additional funding from the Washington State Library, California Digital Library, and other sources'.

One can 'subscribe for free to LII New This Week, a weekly mailing of the most recent resources added to the Librarians' Index to the Internet. We have over 17,000 subscribers in 85 countries.'

■ **Library Servers via WWW T. Dowling, comp.**

<http://sunsite3.berkeley.edu/Libweb>. 'Updated daily at midnight, Pacific Time. Libweb currently lists over 7200 pages from libraries in over 125 countries.' Links to related sites, as well.

**189 Looksmart**

<http://search.looksmart.com>

Successful commercial service whose services 'reach Internet users worldwide through top portals, ISPs, and search services including Lycos, InfoSpace, CNET, and LookSmart.com'. There is good financial and operational information about the company within the About Us section of the website.

The core of the service is in three sections:

- Directory: Hand-picked websites organized into categories
- Web: Search engine referencing 1.2 billion web pages
- Articles: 5.5 million articles from over 900 publications.

The last is a non-specialist, general internet article abstract provider, part technical, part current awareness. It offers free searching, and its interface is very clearly laid-out, with excellent display features. And although the coverage is not extensive, it has a certain serendipitous quality, leading one to worthwhile material from unexpected sources – partly, of course, because of its relatively limited coverage.

A nice commercial service.

- **MagPortal** <http://magportal.com>. Browse or keyword search linking to the full text of magazine articles. Good for rapidly getting up-to-date introductions to a new topic.

**190 MarketResearch.com**

[www.marketresearch.com](http://www.marketresearch.com)

'Aggregator of global business intelligence representing the most comprehensive collection of published market research available on-demand.'

Very good coverage, including of Life Sciences (e.g. 24 Reports for 'Alternative and Complementary Medicine'; 16 for 'Enzymes') and Heavy Industry (e.g. 129 Reports for 'Agricultural Chemicals'; 194 for 'Natural Gas'). Easy search and browsing.

An excellent service with searching for reports freely available and normally leading to brief introductory descriptions of each (thereafter fee-based). There is also a free email alert service of new market research reports in each industry.

- **Market Research on the Web: MROW** IRN Research. [www.marketresearchontheweb.com](http://www.marketresearchontheweb.com). Links to market data, company lists, statistics, and industry news on over 3000 regularly evaluated UK and European sites, including trade associations, professional bodies, trade journals, research companies, consultants, industry sites and portals.
- **Mindbranch** [www.mindbranch.com](http://www.mindbranch.com). 'One-stop-shop for syndicated and custom industry research from 350 independent research firms'.
- **ResearchandMarkets** [www.researchandmarkets.com](http://www.researchandmarkets.com). 'The world's largest market research resource – 373,202 live reports' (27 February 2005).

**191 MERLOT: Multimedia Educational Resource for Learning and Online Teaching**

[www.merlot.org](http://www.merlot.org)

Consortium of higher education institutions which collaboratively provide peer-reviewed links to online learning materials. At least two higher education faculty members conduct each review, the reviews being performed against evaluation standards in three dimensions: Quality of Content, Potential Effectiveness as a Teaching Tool, and Ease of Use. In addition, each resource is scored on a 1–5 scale, 5 stars being the highest. A review must average three stars (or textual equivalent) to be posted to the MERLOT site.

Mid-2004, there were almost 4500 science and technology entries (defined to include health science); over 700 for mathematics and statistics.

- **Canada's SchoolNet** [www.schoolnet.ca/home/e](http://www.schoolnet.ca/home/e). Access to details of over 7000 Learning Resources, as well as @SchoolNet Today – a daily information news service on the world of e-learning.

**192 Moving Image Gateway**

**British Universities Film and Video Council**

[www.bufvc.ac.uk/gateway](http://www.bufvc.ac.uk/gateway)

'New service that collects together websites that relate to moving images and sound and their use in higher and further education. The sites are classified by academic discipline, some forty subjects from Agriculture to Women's Studies, collected within the four main categories of Arts and Humanities, Bio-Medical, Social Sciences and Science and Technology.'

- **Researcher's Guide Online** [www.bufvc.ac.uk/databases/rgo.html](http://www.bufvc.ac.uk/databases/rgo.html). Entries for some 550 film, television, radio and related documentation collections in UK/Ireland. Includes national/regional archives, stockshot libraries/collections held by local authorities, museums, further/higher education, companies, individuals.

**193 National Grid for Learning [UK]**

[www.ngfl.gov.uk](http://www.ngfl.gov.uk)

Gateway to educational resources on the internet – a 'network of selected links to websites that offer high quality content and information'. Primarily targets the UK schools market. Good, concise descriptions. Full A–Z site listing plus fortnightly series of guides to specific topics, often tied into national/international events: e.g. 'The NGfL guide to World Aids Day 2003'; 'The NGfL guide to European Science and Technology Week'.

- **National Learning Network** [www.nln.ac.uk](http://www.nln.ac.uk). National partnership programme set-up in 1999 designed to increase the uptake of information learning technology across the learning and skills sector in England. Currently undergoing major re-evaluation: instructive to review the website, e.g. the FAQs.
- **Qualifications and Curriculum Authority** [www.qca.org.uk](http://www.qca.org.uk). UK non-departmental body that maintains and develops the national curriculum and associated assessments, tests and examination; accredits and monitors qualifications in colleges and at work. Useful descriptive information and links in the 'Subjects' pages.

**194 National Science Digital Library**

**National Science Foundation**

[www.nsdsl.org](http://www.nsdsl.org)

Important educational resource for science, technology, engineering and mathematics at all levels funded by the US NATIONAL SCIENCE FOUNDATION. Aims to provide descriptions of and access to exemplary resource collections. The database can be searched or browsed, and the Library offers a range of ancillary services.

NDSL Portals 'provide specialized views of selected NSDL resources organized around the needs of specific audiences. These audiences may be defined by grade level, discipline, resource or data type, or some other designation ... (They) are developed and managed in partnership with organizations and institutions that have a history and expertise in serving the portal's target audience'.

- **Cornell Theory Center Math and Science Gateway** [www.tc.cornell.edu/Edu/MathSciGateway](http://www.tc.cornell.edu/Edu/MathSciGateway). Award-winning US Gateway provides links to resources for educators and students in grades 9–12. Descriptions of useful websites on many topics within science, technology and medicine.

**195 NTIS [USA]****National Technical Information Service**

[www.ntis.gov](http://www.ntis.gov)

'The largest central resource for government-funded scientific, technical, engineering, and business related information available today. Here you will find information on more than 600,000 information products covering over 350 subject areas from over 200 federal agencies.'

There is a concise Site Index, useful entrées therein including:

Datfiles 'NTIS offers access to a number of important US Government Databases. These databases include all types of information including: Bibliographic records of scientific, technical, and business information; Statistical databases; Databases developed from Government collected information'

Health 'NTIS is the central information source for more than 20,000 health and safety-related publications produced by US Government agencies since 1990.'

What's New Includes list of the 'Hot Topics Archives': bibliographies of NTIS products about subjects in the news.

- **Business and International Trade Online Bookstore**

<http://tradecenter.ntis.gov>. Collection of more than 20,000 titles specifically chosen with the business community in mind. Publications come from commercial publishers, non-profit organizations, and government organizations; it is possible to search each publisher's file separately.

- **Federal Research in Progress** <http://grc.ntis.gov/fedrip.htm>.

Current federally funded projects in physical sciences, engineering, life sciences. Contributions from 12 US Agencies including Departments of Agriculture and Energy, EPA, NIH, NASA, NIST, NRC, NSF, USGS.

- **GOV.Research.Center: GRC** <http://grc.ntis.gov>. 'Partnership between NTIS and National Information Services Corporation to provide a single access point to valuable government information. This joint venture combines NISC's award winning technology and NTIS's valuable content'.

**196 OAIster****University of Michigan**

<http://oaister.umdl.umich.edu/o/oaister>

'Project of the University of Michigan Digital Library Production Services, originally funded through a Mellon grant ... Our goal is to create a collection of freely available, difficult-to-access, academically-oriented digital resources that are easily searchable by anyone.' Digital Resources are defined as including items such as: electronic books; online journals; audio files; images; movies. The service uses the University of Illinois's Metadata Harvester (<http://uilib-oai.sourceforge.net>).

Early April 2005, the service offered access to 5,272,686 records from 458 institutions. Examples of STM-related collections come from: Advanced Knowledge Technologies Eprints Archive; arXiv.org Eprint Archive; BioMed Central; CERN Document Server; Chemical Preprint Server; Digital Library for Earth System Education, but also – more importantly – from several hundred individual institutions (such as the University of Tasmania ePrints Repository).

Good – and elegant – search and display system (though response time can be slow). An important service.

- **SAIL-eprints** <http://eprints.bo.cnr.it>. Collects metadata from OAI (OPEN ARCHIVES INITIATIVE) data repositories all over the world publishing materials in a wide range of science and technology. List of sites with dates of last harvesting, numbers of records and sets.

**197 The Online Books Page**

J.M. Ockerbloom, ed.; University of Pennsylvania

<http://onlinebooks.library.upenn.edu>

Regularly updated listing of over 20,000 free books on the web plus 'News', 'Features', 'Archives', 'The Inside Story': a very useful facility.

**198 Online Dissertation Services [USA]**

ProQuest.

[www.umi.com/hp/Products/Dissertations.html](http://www.umi.com/hp/Products/Dissertations.html) [FEE-BASED]

Clicking on the link 'Dissertation Services' leads to a useful summary page headed UMI Dissertation Services: 'Your map to UMI's many dissertation services and products. UMI publishes and archives dissertations and theses; sells copies on demand; and maintains the definitive bibliographic record for over 1.4 million doctoral dissertations and master's theses.' The page provides help for those 'preparing', 'finding', 'ordering', and 'using' dissertations and theses. In addition, there are links to: 'Digital Dissertations FAQ'; 'Dissertation Lore', and 'Related Web Sites', as well as to the service below and PROQUEST DIGITAL DISSERTATIONS. A really helpful site.

- **Dissertation Express**

<http://tls.il.proquest.com/hp/Products/DisExpress.html>. 'Students, faculty, staff and researchers can now order their own unbound copies of dissertations and theses with express delivery to their home, school or office. Select from over one million titles available from UMI.' There is also a 'Library' service.

**199 ProQuest Dissertations & Theses [USA]**

ProQuest.

[wwwlib.umi.com/dissertations](http://wwwlib.umi.com/dissertations)

'Welcome to ProQuest Digital Dissertations! As a visitor, you will be able to freely access the most current two years of citations and abstracts in the Dissertation Abstracts database. To search the entire database of more than 1.6 million titles, you will need to connect from a subscription institution.'

One of ProQuest's Online Dissertation Services. Contains more than 2 million entries, culled from over 1000 graduate schools and universities, the first accepted in 1861. Full-text of 1.7 million of the publications is available in paper and microform format; there is online access to the complete file of dissertations in digital format starting with titles published from 1997 forward; the full text of over 450,000 dissertations is available at the website.

'Beginning with dissertations received in 2000, all titles will receive an ISBN (International Standard Book Number). Titles will be listed in the UMI Dissertation Abstracts database and other well known on-line and web-based book distributors and databases.'

- **Dissertation Abstracts Online**

<http://library.dialog.com/bluesheets/html/bl0035.html> [DESCRIPTION]. Covers 'virtually every American dissertation accepted at an accredited institution since 1861'. Selected Masters theses since 1962. Also, from 1988, covers dissertations from 50 British universities plus some European works.

**200 Psci-com****Wellcome Trust and Resource Discovery Network**

[www.psci-com.org.uk](http://www.psci-com.org.uk)

Guide to quality Internet resources on public engagement with science and technology. Under headings such as associations, nature of science, communications, science education lists key websites and an annotation on each. Topics covered include astronomy and space science, consumer health, ethics, science and art, sociology of science and zoology. There is an electronic discussion forum associated with the website.

**201 Public Affairs Information Service**

CSA.

[www.pais.org](http://www.pais.org) [FEE-BASED]

Publishes 'indexes and abstracts that help people identify and locate documents about important political, economic, and social issues'. Its 7000 Subject Headings Authority File is classified under 24 Broad Topics and 306 Subtopics.

Good source for periodical articles, books, government documents, serials, grey literature, pamphlets, reports of public and private organizations, etc. regarding: 'Agriculture, forestry, and fishing and agricultural policy'; 'Energy resources and policy'; 'Environment and environmental policy'; 'Health conditions and policy'; 'Manufacturing and heavy industry'; 'Media, telecommunications, and information policy'; and 'Science and technology policy'.

Acquired by CSA from OCLC.

**202 Repositories of Primary Sources**

T. Abraham

[www.uidaho.edu/special-collections/Other.Repositories.html](http://www.uidaho.edu/special-collections/Other.Repositories.html)

An excellent, regularly updated geographically organized listing which is 'solely of web sites that describe physical collections of rare books, manuscripts, archives, historical photographs, oral histories, or other primary sources. The list focuses on actual repositories; therefore virtual collections and exhibitions are excluded. Others maintain lists of that sort, one is compiled by SMITHSONIAN INSTITUTION Libraries.' Over 5000 entries.

**203 SCRAN** [UK][www.scran.ac.uk](http://www.scran.ac.uk) [FEE-BASED]

'The award winning learning image website with access to quality images, sounds, movies and learning resources. There are over 300,000 images from museums, galleries and archives.' Non-subscribers can search the whole resource base for free and see thumbnail images; subscribers gain access to full records, captions, large images, movies and learning resources. An excellent service. Entries have to have some relationship to Scotland; but do not have to be about Scotland – so there is a wealth of images about non-Scottish topics.

**204 The software encyclopedia: a guide for personal, professional and business users**

Bowker, 2004. 2 v., \$300.00. ISBN 0835246353.

[www.bowker.com/catalog/000103.htm](http://www.bowker.com/catalog/000103.htm) [DESCRIPTION]

'Comprehensive, easy-to-navigate guide filled with detailed information on micro-computer software. Listings of over 40,100 software programs from 3845 publishers and distributors are fully annotated to facilitate research and acquisition.'

**205 Special Issues**[www.specialissues.com](http://www.specialissues.com) [FEE-BASED]

'Special issues are any regularly published special editorial content usually having an industry or company focus ... Examples of special issues include: industry outlooks, overviews, or surveys; statistical issues; company ranking lists; buyers guides; salary surveys; product/industry focus issues; membership directories; who's who registers; tradeshow specials; etc.'

Early 2005, there was coverage of an impressive c.3317 magazines: the titles of each listed on the website.

■ **List of Lists G. Price** [www.specialissues.com/lol](http://www.specialissues.com/lol). Very useful open access database of ranked listings of companies, people and resources

freely available on the internet. Distinct from main SI Site, no password needed – but invitation to support endeavour, either through advertising or cash donation.

**206 VINITI: All-Russian Institute of Scientific and Technical Information** [RUS][www.viniti.ru/Welcome.htm](http://www.viniti.ru/Welcome.htm)

'The leading information centre in Russia and CIS countries has been supplying the world community with scientific and technical information since 1952. The main task of VINITI is to provide information support to scientists and specialists of Russia in natural and technical sciences.' There is an excellent Library of Congress Science Reference Guide 'Russian Abstract Journals in Science and Technology' (No 32) at: [www.loc.gov/rr/scitech/SciRefGuides/russian2.html](http://www.loc.gov/rr/scitech/SciRefGuides/russian2.html).

■ **Referativnyi Zhurnal** Monthly (Chemistry and Chemical Technology: Biweekly). [www.viniti.ru/english/vinprint.html#VINIT](http://www.viniti.ru/english/vinprint.html#VINIT) [DESCRIPTION]. Also known as *VINITI Abstracts Journal*. Covers about one million documents annually including about 30% from Russian sources, the rest from all over the world. Entries for the latter are often in the original language of publication.

**207 Walford's guide to reference material**

Facet Publishing.

The precursor of the present work: *The New Walford*, providing evaluative descriptions of some 25,000 English- and foreign-language reference works organized into three volumes.

■ **Universal Decimal Classification Universal Decimal Classification Consortium**. [www.udcc.org](http://www.udcc.org) [DESCRIPTION]. Consortium oversees scheme used to classify entries in Walford's Guide. Relatively small worldwide usage of the scheme elsewhere, but it is still being developed. Contains over 55,000 main numbers and 10,000 common auxiliaries. Strong on STM.

■ **1. Science and technology** M. Mullan and P. Schlicke, eds 8th edn 1999, 704pp. £135.00. ISBN 185604341X.

■ **2. Social and historical sciences, philosophy and religion** A. Day and M.J. Walsh, eds 8th edn 2000, 808pp. £135.00. ISBN 185604369X.

■ **3. Generalia, language and literature, the arts** A. Chalcraft, R. Prytherch and S. Willis, eds 7th edn 1998, 1200pp. £135.00. ISBN 1856043002.

**208 The Web Library: building a world class personal library with free web resources**

N.G. Tomaiuolo CyberAge Books, 2003, 395pp. \$29.95. ISBN 0910965676.

<http://www.ccsu.edu/library/tomaiuolo/theweblibrary.htm> [COMPANION]

A very useful guide. The author gives extensive contextual descriptions of hundreds of rich content sites which are free to use, supplementing the coverage within each chapter – Article and Indexes; News; Reference; Expert, AskA and Digital Reference; and so on – with a series of Insider's Viewpoint interviews with leading 'Web Library Professionals'. The writing is engaging – almost suitable for bed-time reading! – picking out all sorts of interesting facts.

Of course, not all the sites listed deliver the quality of content the user might need; and inevitably, being free resources, relatively they are more subject to change than fee-based ones. But, mid-2004, most of the entries in the companion website had been recently updated; and that in itself – freely accessible, of course! – is a valuable resource.

**209 WWW Virtual Library**

[www.vlib.org.uk](http://www.vlib.org.uk)

Originally established by Tim Berners-Lee.

The service is run by a loose confederation of volunteers and the quality and currency of the various subject area sites is variable and the overall subject granularity uneven.

However, 'the central affairs of the VL are now co-ordinated by an elected council, which took office in Jan 2000. Major decisions, including a set of bylaws are decided by the membership at large'.

Many good examples of libraries are cited elsewhere in TNW.

- **Dmoz Open Directory Project** <http://dmoz.org>. The largest, most comprehensive human-edited directory of the web. It is constructed and maintained by a vast, global community of volunteer editors.

**210 Yahoo! Directory**

<http://dir.yahoo.com>

Alongside its many other services, became a leading search directory, then used *Google* [q.v.] as its search engine, but early in 2004 started to use its own search facilities.

Yahoo's directory of websites is very large and the coverage of individual sections is often uneven. But: navigation down the subject tree is quick and easy; the subject classifications of the sites covered are usually fine; there is almost always a brief helpful description of each site; and it is normally clear which entries have been sponsored and which not. Certainly worth checking for out of the way topics where you just want to get a quick feel for what is going on. Note also the daily list of New Additions.

## Digital data, image &amp; text collections

**211 Australian Bureau of Statistics**

[www.abs.gov.au](http://www.abs.gov.au)

Australia's official statistical organization. The 'Themes' heading leads to pages labelled: 'Agriculture'; 'Building and Construction'; 'Environment'; 'Health'; 'Mining'; 'Science and Innovation' – each of which is clearly structured, and the last of which has questions such as: 'About ABS science and innovation statistics activities'; 'What's new in science and innovation statistics?'; 'Latest ABS science and innovation statistics'; and so on.

**212 California Digital Library**

[www.californiadigitallibrary.org](http://www.californiadigitallibrary.org)

Established in 1997 as a University of California (UC) Library, has become one of the largest digital libraries in the world. The URL provides a single point of access for the publicly available digital collections produced or managed by the UC.

The Subject Index includes entries such as: 'AIDS (Disease)'; 'Bacteria'; 'Coelacanth'; 'Diagnostic imaging'; etc. Includes access to the eScholarship Repository ('Scholar-led innovation in scholarly communication'), the Online Archive of California ('Provides access to and descriptions of over 6000 collections of primary source materials') and much else. The descriptions of the University of California digital collections are provided by the LIBRARIANS' INDEX TO THE INTERNET.

A model site of its type.

**213 Digital Curation Centre** [UK]

**Joint Information Systems Committee and UK e-Science Programme**

[www.dcc.ac.uk](http://www.dcc.ac.uk)

'Scientists and researchers across the UK generate increasingly vast amounts of digital data, with further investment in digitization and purchase of digital content and information. The scientific record and the documentary heritage created in digital form are at risk, by technology obsolescence and by the fragility of digital media. Working with other practitioners, the Digital Curation Centre will support UK institutions to store, manage and preserve these data to ensure their enhancement and their continuing long-term use. The aim of the Centre is to provide a national focus for research into curation issues and to promote expertise and good practice, both national and international, for the management of all research outputs in digital format.'

Centre was due to be formally launched towards end of 2004, its partners being: University of Edinburgh; University of Glasgow; UKOLN; Council for the Central Laboratory of the Research Councils.

- **DCC Associates' Network** [www.dcc.ac.uk/network.html](http://www.dcc.ac.uk/network.html). Network of relevant UK data organizations, leading data curators overseas and supranational standards agencies, sectors of UK industry and commerce involved in digital curation, all being communities the Centre must engage with for it to be successful.
- **Dspace** [www.dspace.org](http://www.dspace.org). Digital library system that captures, stores, indexes, preserves and redistributes the intellectual output of an organization's researchers in digital formats. Developed jointly by MIT Libraries and HP and now an open source system.

**214 ebrary**

[www.ebrary.com](http://www.ebrary.com) [FEE-BASED]

Access to collections of more than 60,000 full-text books, reports, maps and other content from leading publishers and spanning multiple subject areas. Founded in 1999, ebrary is privately held and is funded by Random House Ventures LLC, Pearson plc and The McGraw-Hill Companies.

ebrary has recently expanded significantly and now has some 500 library subscribers in over 60 countries, each able to choose standard or custom-made groups of content. It also provides publisher branded databases, an example being SME SOURCE from the Society of Manufacturing Engineers.

But the company is also very actively developing its technology capabilities, announcing for instance early 2005 a new server-based technology code-named Isaac. This 'lets libraries create and share remote collections of PDF content and create virtual portals that seamlessly integrate PDF documents from any remote collection, their institutional repository or content management system, as well as existing subscription databases' (*Information Today*, January 2005).

**215 Eurostat**

**European Commission**

[europa.eu.int/comm/eurostat](http://europa.eu.int/comm/eurostat)

Website of the Statistical Office of the European Union providing links to statistical information about the Member States. 'Themes' include: Agriculture and fisheries; Environment and energy; Industry, trade and services; Population and social conditions; Science and technology – and there is easy navigation to documents and data treating quite specific aspects (e.g. Causes of death; operation of

nuclear power stations; broadband penetration rate), plus more general overviews.

■ **RAMON: Eurostat's Classification Server**

<http://europa.eu.int/comm/eurostat/ramon>. Includes index of international statistical classifications, general descriptions, hierarchical structure and explanatory notes.

■ **Statistics on science and technology in Europe**

1991–2002. 173pp. €35.00. ISBN 9289468238. Published 25 February 2004. PDF version available.

**216 FedStats** [USA]

[www.fedstats.gov](http://www.fedstats.gov)

Gateway to statistics from over 100 US Federal agencies. The Topics A to Z has entries, for instance, for: AIDS/HIV; Breastfeeding; Coal ... Pollution; Research and development; Science and engineering; and so on. 'Data access tools' describes selected agency online databases; the 'Statistical reference shelf' and 'Additional links' provide concise lists of the most important other collections of statistics.

It is noted that: 'All of the statistical information available through FedStats is maintained and updated solely by Federal agencies on their own web servers.'

■ **Bureau of the Census** [www.census.gov](http://www.census.gov). Access among much else to details of the *Statistical Abstract of the United States*: 1400 tables and charts with statistics from the most recent year or period available.

■ **Statistics sources** 28th edn, Thomson Gale, 2004. \$545.00. ISBN 0787674575. Guide to current sources of factual quantitative information on more than 20,000 specific subjects, incorporating almost 100,000 citations and more than 2000 sources. US and international coverage.

**217 Gale Virtual Reference Library**

Thomson Gale.

[www.gale.com/eBooks](http://www.gale.com/eBooks) [FEE-BASED]

Searchable collection of over 100 subject encyclopedias, handbooks, guides, etc. covering the humanities and social sciences as well as science and technology. Includes many leading Thomson Group titles, a number referenced elsewhere in TNW. Provides detailed search facilities and standard e-book navigation features such as browsing tables of contents and indexes, printing, e-mailing, and so on. Each library can customize the Virtual Library to fit its needs, selecting titles to serve children's, academic and general audience requirements.

■ **Expanded Academic ASAP** [www.gale.com/ExpandedAcademic](http://www.gale.com/ExpandedAcademic) [FEE-BASED]. 'Thomson Gale's premier database for research in all the academic disciplines. 3500 indexed and full-text titles – of which 2100 are peer-reviewed – in all disciplines with more than 20 years of backfile coverage'.

■ **Gale Encyclopedia of Science** K.A. McGrath and S. Blachford, eds 3rd edn, Thomson Gale, 2003. \$575.00. ISBN 0787675547.

[www.galegroup.com](http://www.galegroup.com) [DESCRIPTION]. Designed to cover the gap between introductory and high-level texts. Alphabetical by article title.

■ **Gale's Ready Reference Shelf**

[www.galegroup.com/pdf/navguide/galerref\\_nvng.pdf](http://www.galegroup.com/pdf/navguide/galerref_nvng.pdf) [DESCRIPTION]. 14 of Gale's most popular reference titles, fully searchable across all files.

■ **Science and its times** Thomson Gale, 2000. \$650.00. ISBN 078763932X. [www.gale.com/gvrl](http://www.gale.com/gvrl) [FEE-BASED]. Eight-volume work covering different time periods with each volume featuring 25–30 essays of 1500 to 3000 words, 30 biographical entries of 500 to 1000 words and about 100 brief biographical profiles. Available online: see website.

**218 HighWire Press**

Stanford University HighWire Press.

[highwire.stanford.edu](http://highwire.stanford.edu)

A division of Stanford's University Libraries which hosts 'over

15 million articles from over 4500 PubMed journals, including 851,711 free full text articles from 853 HighWire-hosted journals' (18 April 2005). Particularly strong in the biological and medical sciences, and so far including in its portfolio 42 of the 100 most frequently cited journals in the world: all 'available from the journals' own sites for complete and accurate representation of the research at its source including articles published online ahead of print'.

HighWire is committed to the principles of open access; and through its free back issues programme 'participating journals make all their research content free after a brief delay. Currently, 50 journals on HighWire offer content free within six months or less from the day of publication, another 161 titles after a wait of twelve months or more, and all offer immediate access for members, subscribers or those on an authorized institutional network'.

A particularly strong feature of the service is the Inter-Journal Link service whereby 'when one HighWire-hosted journal cites an article from another HighWire-hosted journal, hyperlinks have been created which allow you to move from the original article to the abstract of the cited article. Likewise, links have been created to allow users of other HighWire-hosted journals to quickly and easily access other HighWire-hosted articles. These Inter-Journal links take you to the abstract of the cited reference. Limited free access may be granted to allow you free use of the single article which was cited by the original article.'

■ **CiteTrack** . [www.highwire.org/help/citetrack](http://www.highwire.org/help/citetrack). Provides alert by e-mail whenever new content in a participating journal is published that matches criteria based on the topics, authors and articles being tracked. Alerts include citations (authors, title, journal name, volume and page) and URLs.

**219 The Internet Archive**

[www.archive.org](http://www.archive.org)

'Is building a digital library of Internet sites and other cultural artifacts in digital form. Like a paper library, we provide free access to researchers, historians, scholars, and the general public.'

The Archive's Wayback Machine currently contains over 300 terabytes of data and is growing at a rate of 12 terabytes per month. 'This eclipses the amount of text contained in the world's largest libraries, including the Library of Congress.'

**220 JSTOR**

[www.jstor.org](http://www.jstor.org)

A journal archival service – originally primarily designed to free up costly library shelving space – which delivers scanned page images to its users, while using raw text files (created using Optical Character Recognition (OCR) software) behind the images for search purposes.

On 1 December 2004, 2244 institutions were participating from 86 countries in collaboration with 272 participating publishers. 553 journals had become represented in the System, 457 accessible online.

JSTOR does not at present provide public access to its data: 'Access to the JSTOR archive is available only through affiliation with a participating institution (US or International) or through an individual account with a participating publisher.' However, they are continuing to review this policy.

**221 Knovel**

[www.knovel.com](http://www.knovel.com)

Search tool that aggregates over five hundred full-text engineering handbooks and conference proceedings from a

range of scientific-technical publishers. Abstracts and tables of contents can be retrieved freely but access to the full text requires a subscription. Books that can be browsed cover broad disciplines such as mechanical, electrical and chemical engineering alongside specialisms such as semiconductors, coatings and radar technology.

Very sophisticated service: especially good at handling data-sets. Originally targeted at companies, academic institutions and government organizations, but more recently single-user access has become available.

## 222 NetLibrary

### OCLC Online Computer Library Center

<http://legacy.netlibrary.com> [FEE-BASED]

'We offer the only comprehensive approach to eBooks that integrates with the time-honored missions and methods of libraries and librarians. Our vision is one of enhancing the role of librarians as stewards of knowledge, supporting their crucial role in serving millions of people every day who seek information.'

Purchasers can choose from some 40,000 titles across all subjects, including – for instance within medicine and health – from major publishers such as McGraw-Hill Professional, John Wiley & Sons, BMJ Books, Kluwer, Taylor & Francis, Springer-Verlag, Karger, Health Administration Press, World Health Organization; and – for example, within IT – from Microsoft Press, Sybex, Elsevier, and so on. Recently, unlimited access to the entire catalogue of Kluwer e-books was introduced: the cost being 150% of list price plus Content Service and Support fees.

In the website's extensive Help system, we are reminded: 'Remember, netLibrary is not a subscription service. You own the eBooks.'

## 223 Networked Digital Library of Theses and Dissertations: NDLT

<http://scholar.lib.vt.edu/theses>

Consortium of over 170 members, including 147 member universities (2 consortia), and 4 national libraries – 30 of which are 'Effective' members, the remainder 'Associated'. Useful gateway to activity in this arena.

### ■ Virginia Tech Electronic Theses and Dissertations

<http://scholar.lib.vt.edu/theses>. Leading developer of access to electronic theses and dissertations; early 2005 over 6300 titles (some of which are restricted or withheld). Part of the University's extensive Digital Library and Archives.

### ■ Australian Digital Theses Program <http://adt.caul.edu.au>.

Aims to 'create a distributed national database of digitised theses available via the web. Providing access via a central database will greatly enhance knowledge about Australian theses and research both nationally and internationally'.

## 224 Occupational outlook handbook [USA]

### Bureau of Labor Statistics

[www.bls.gov/oco](http://www.bls.gov/oco)

'Revised every two years, the Handbook describes what workers do on the job, working conditions, the training and education needed, earnings, and expected job prospects in a wide range of occupations.' Examples of occupations covered within the 'Professional and Related Service' sector are: mathematicians; atmospheric scientists; conservation scientists and foresters; pharmacists; materials engineers; librarians.

Complementing the Handbook is the equally valuable *Career Guide to Industries* which 'provides information on

available careers by industry, including the nature of the industry, working conditions, employment, occupations in the industry, training and advancement, earnings and benefits, employment outlook, and lists of organizations that can provide additional information'.

The Guide discusses 42 industries, accounting for 3 out of every 4 wage and salary jobs in the USA in 2002, including those within: agriculture, mining and construction; manufacturing; information (broadcasting, ICT-based industries, publishing); government; and education and health services. 'As the largest industry in 2002, health services provided 12.9 million jobs ... With about 1 in 4 Americans enrolled in educational institutions, educational services is the second largest industry, accounting for 12.7 million jobs.'

There is also an 'Overview and Outlook' which provides an excellent summary of the present situation and outlook for the various industries and economy within the USA, as well as an essay 'Tomorrow's Jobs'.

## 225 Office for National Statistics [UK]

[www.statistics.gov.uk](http://www.statistics.gov.uk)

The government department that provides UK statistical and registration services. Browse by theme among: Agriculture, Fishing and Forestry; Commerce, Energy and Industry; Health and Care; Natural and Built Environment; etc.

■ **Guide to official statistics** Downloadable PDF 2000. ISBN 01162161X. [www.statistics.gov.uk/ci/advancedsearch.asp](http://www.statistics.gov.uk/ci/advancedsearch.asp). An invaluable and comprehensive directory of all statistical censuses, surveys, administrative systems, publications and other services produced by government and a range of other organizations.

■ **Sources of non-official UK statistics D. Mort, comp.** 5th edn, Gower, 2002, 358pp. £65.00. ISBN 056608449X. Details of c.1000 publications and services (including electronic publications) from trade associations, professional bodies, banks, consultants, employers' federations, forecasting organizations, etc., together with statistics appearing in trade sources.

### ■ Standard Occupational Classification 2000

[www.statistics.gov.uk/methods\\_quality/ns\\_sec/soc2000.asp](http://www.statistics.gov.uk/methods_quality/ns_sec/soc2000.asp). Eight major groups including: 2. Professional occupations; 3. Associate professional and technical occupations; 5. Skilled trades occupations; 6. Personal service occupations; 8. Process, plant and machine operatives.

■ **Statistics Commission** [www.statscom.org.uk](http://www.statscom.org.uk). Independent non-departmental public body set up to help ensure that official statistics are trustworthy and responsive to public needs. Operates openly independent of both Ministers and the producers of statistics, with all its papers normally made public.

### ■ United Kingdom Standard Industrial Classification of Economic Activities 2002: UKSIC (2003)

[www.statistics.gov.uk](http://www.statistics.gov.uk). Downloadable PDF of complete classification.

Introduction gives good background on relationship of current to previous versions, as well as to EU, international and other related classifications.

## 226 Oxford Reference Online

Oxford University Press. Individual annual subscription: £95.00 + VAT/\$139.00. Institutional subscriptions available.

[www.oup.com/online](http://www.oup.com/online) [FEE-BASED]

Core Collection of about 100 titles published by OUP, including bilingual, science and medical dictionaries, plus – within the Premium Collection – books from the Oxford Companion series and the *Oxford Dictionary of Quotations*. Includes cross-referencing within and across the included texts, as well as external links to additional sources of relevant information. An excellent compilation.

*This is an example of a range of online services available from OUP. Others*

include: *American National Biography*; *Oxford Dictionary of National Biography*; *Oxford Digital Reference Shelf*; *Oxford English Dictionary*; *Oxford Scholarship Online* – as well as *Oxford Journals*. Check the website for details.

'the content is superb, and the design makes use of some of the best features we've seen in online reference publishing. Recommended for any and every library. This is a top-quality resource.' (*Library Journal*)

## 227 Public Library of Science

[www.plos.org](http://www.plos.org)

Non-profit organization of scientists and physicians committed to making the world's scientific and medical literature a freely available public resource. Operates with the 'author-pays' open access publishing model. PLoS has published its own journals, beginning with *PLoS Biology* on October 13, 2003 and *PLoS Medicine* on October 19, 2004. PLoS is launching three new community journals in 2005 — *PLoS Genetics*, *PLoS Computational Biology*, and *PLoS Pathogens*.

## 228 Statistics Canada

[www.statcan.ca](http://www.statcan.ca)

The site of Canada's central statistics agency. Several helpful features, including: First visit to our site?; a set of Learning Resources; Statistics Canada Thesaurus – list of subject terms used to describe the Agency's information resources; The Daily – free e-mailed bulletin which can be customized just to include 'hyperlinks to articles and product release announcements only on the subject(s) you have selected – and only on the days they appear in The Daily'.

## 229 Xreferplus

[www.xreferplus.com](http://www.xreferplus.com) [FEE-BASED]

Online reference library providing access to full text of 150 reference works including dictionaries, encyclopedias, thesauri, etc. Includes books on health, science and technology from publishers such as: A&C Black; Blackwell Publishing; Cambridge University Press; Collins; Columbia University Press; Elsevier; Harvard University Press; Houghton Mifflin; Macmillan; Oxford University Press; Philip's; Wiley; Woodhead Publishing.

The service is distinctive for its use of 'unique proprietary technology that integrates information through a network of intelligent, multi-dimensional cross-references'. The site provides exploratory access to The Research Mapper: 'a visual map that displays how search terms and topics are interconnected'. Well worth trying!

'The notable feature in xreferplus is its incredible cross-referencing capabilities ... A reliable, easy to use, fast and ready reference tool that can streamline your information search.' (*Library Quarterly*)

## Directories & encyclopedias

### 230 A to Z of STS scientists

**E.H. Oakes** Facts On File, 2002, 372pp. \$45.00. ISBN 0816046069. 'This is a comprehensive one-volume A-to-Z reference of past and present scientists who have contributed significantly to the new and growing field known as Science, Technology, and Society (STS). Those profiled include chemists, physicists, biologists, engineers, and mathematicians. The common element shared by these noted individuals is the way in which their scientific work was shaped by social setting. Designed for high school through early college students, this

is an ideal reference of notable male and female scientists from antiquity to the present. The book contains approximately 200 entries and 62 black-and-white photographs.'

*Other works in the 8-volume Notable Scientists series cover: Biologists; Chemists; Computer Scientists; Earth Scientists; Marine Scientists; Physicists; Scientists in Weather and Climate.*

'Recommended for the science reference collections of high school, public, and undergraduate libraries.' (*E-STREAMS*)

### 231 An atlas of cyberspaces

**M. Dodge; University College London**

[www.cybergeography.org/atlas](http://www.cybergeography.org/atlas)

Fascinating full colour examples of maps and graphic representations of the geographies of the internet, world wide web and other emerging cyberspaces. Unfortunately, a number of the links need updating; but there is an active group and discussion list which can be joined.

### 232 Biographical dictionary of scientists

**R. Porter and M. Ogilvie, eds** 3rd edn, Oxford University Press, 2000, 1214pp. 2 v, \$125.00. ISBN 0195216636.

Over 1280 biographies of key people (including 53 women) in science, mathematics, engineering and technology in two volumes written by 43 contributors. Each entry of 500 to 1200 words presents the contribution of the scientist. There is an extensive glossary and appendices listing Nobel Prize and Field Medal winners. Also contains a short section of essays on major science areas (astronomy, biology, chemistry, earth science, engineering and technology, mathematics and physics).

'The updated versions of the historical reviews, the new chronologies and other features as well as the inclusion of women are significant enough changes to warrant purchase.' (*E-STREAMS*)

### 233 Encyclopædia Britannica Online

£39.99 [2004].

[www.britannica.co.uk](http://www.britannica.co.uk) [FEE-BASED]

Access to the online Britannica Premium Service includes: the 32-volume Encyclopaedia Britannica 2003; the new Britannica Student Encyclopedia, ideal for students age 10 upwards; the Britannica Internet Guide, over 165,000 of the web's best sites rated and reviewed by the editors. A wide range of other online as well as print services is available.

*Within the USA, the URL: <http://corporate.britannica.com/products.html> gives an overview of Britannica products available for home, school, library or corporation.*

■ **Britannica Book of the Year** 904pp. £60.00 [2003]. ISBN 1593391005. Includes good coverage of STM developments.

### 234 Encyclopedia of associations: international organizations

41st edn, Gale, 2004. 3 v. Also available CD-ROM, \$765.00. ISBN 0787668826.

[www.galegroup.com](http://www.galegroup.com)

Provides addresses and descriptions of professional societies, trade associations, and other non-profit membership organizations worldwide. Entries are classified by subject. Related volumes cited below.

*Available online through DIALOG.*

■ **National organizations of the US** 41st edn 2004. \$650.00. ISBN 0787668710. This is v. 1. Also available are two companion volumes: v. 2 *Geographic and Executive Indexes*; v. 3 *Supplement* (Updates contact

information from the previous edition and provides coverage of new or newly identified associations and projects).

- **Regional, state and local organizations** 15th edn 2004. \$695.00. ISBN 0787668850. Includes 30,000 primary websites plus an additional 42,000 websites for national affiliates of chapters listed.
- **Yearbook of international organizations Union of International Associations** 42nd edn, K G Saur, 2005. \$1925.00. ISBN 3598245203. [www.uia.org/organizations/pub.php](http://www.uia.org/organizations/pub.php) [DESCRIPTION]. Current details of some 60,000 international non-governmental and intergovernmental organizations. Also available online: see website.

### 235 **Encyclopedia of ethics in science and technology**

**N. Barber** Facts on File, 2002, 386pp. \$60.00. ISBN 0816043140. Well reviewed book which 'features more than 400 entries that describe the varied ethical controversies in science and technology: laws, precedent-setting cases, regulations, agencies and organizations, ethical principles, concepts, people, and important events. Also covered are phenomena that are at the fringes of science but have important ethical implications, including voodoo deaths and experimental research into extrasensory perception (ESP)'.

'Well suited for the high school or multi-disciplinary undergraduate library where students will appreciate quick access to concise overviews of these terms and topics.' (*E-STREAMS*)

- **Encyclopedia of science, technology, and ethics** Macmillan Reference USA, 1800pp. \$425.00. ISBN 0028658310. [www.gale.com](http://www.gale.com) [DESCRIPTION]. Four-volume work announced for July 2005.

### 236 **Encyclopedia of physical science and technology**

**R.A. Meyers, ed.** 3rd edn, Academic Press, 2002, 15,453pp. 18 v., \$4195.00. ISBN 0122274105.

[www.sciencedirect.com/science/referenceworks](http://www.sciencedirect.com/science/referenceworks)

790 articles organized alphabetically by title. Each article is written to a standard format designed to make it useful to various readers with different levels of knowledge about the subject: Outline; Glossary; Defining statement; Main body of the article; Cross-references; Bibliography.

The Index volume is also well thought-out, including: A-Z list of the entries; List of contributors; Contents by subject area (44 broad headings); Relational index; Detailed subject index (c. 350 pp).

A valuable impressive work. Coverage is chemistry, molecular biology, biotechnology, physics, earth sciences, environment and atmospheric sciences, computers and telecommunications, electronics, mathematics, astronomy and space, energy, materials and engineering.

Available online: see website.

### 237 **Findout.tv**

Crystal Reference.

[www.findout.tv](http://www.findout.tv) [FEE-BASED]

'Findout.tv's content covers all popular areas of enquiry, such as plants and animals, technology, sports, history, geography, and the arts. Many entries are educational, providing an introductory account of major concepts in such fields as philosophy, economics, physics, and politics. You will also find a focus on international affairs, especially within Europe.'

'And there is more. A unique feature of Findout.tv is that, every day, our entries are updated with new information to track current affairs. When a significant event occurs, you can read the background to the story on Findout.tv.'

### 238 **Hutchinson Science Reference Suite**

Helicon, 1999. CD-ROM, Various pricings: see website.

[www.rm.com/rmcomhome.asp](http://www.rm.com/rmcomhome.asp) [DESCRIPTION]

Suitable for school use: 19,500 entries; 1000 images covering difficult concepts; interactive quiz; quotations, fascinating facts, memory joggers, etc. Designed to interface with the UK National Curriculum.

'an all-round solid science reference.' (Daily Telegraph)

### 239 **The Nature yearbook of science and technology**

Nature Publishing, 2002, 1340pp. £150.00. ISBN 0333971477.

2nd edn whose core (800 pp) attempted systematically to describe the science systems and major scientific organizations of every country in the world. The aim was 'to provide, not a directory, but an easily navigated hierarchy of detailed profiles of the key players, beginning with science ministries and government bodies, followed by national research bodies, major research institutes, research universities, and so on'.

Supplementing this core was – potentially – a mass of useful information on happenings during the year, work of international bodies, progress within large scientific facilities, etc.: the whole enhanced by reprints from the periodical NATURE itself.

However, unfortunately, the book's typography, its use of monochromatic illustrations, and its general design created a rather dense, bland and uninviting appearance – which was a pity, as the concept behind the tome was excellent.

### 240 **Notable twentieth-century scientists**

**E.J. McMurray, J.K. Kosek and R.M. Valade, eds** Gale Research, 1995, 239pp. 4 v. Supplement 1998. ISBN 0810391813.

1300 scientists active in the 20th century in all the natural, physical, and applied sciences. Includes for each entry: selected writings; sources (citations of biographies, interviews, obituaries, etc.). Subject index.

- **Scientists: their lives & works** UXL, 1997–2002. \$350.00. ISBN 1414404875. 3 vols 1997 extended 7 vols by 2002, and aimed at middle school and above. 'The unique combination of accessible scientific information and fascinating personal details adds a human dimension to the presentation.' *School Library Journal*.
- **Women in science** Macmillan Reference USA, 2000, 421pp. \$95.00. ISBN 0028655028. One of small series rewritten from the publisher's main offerings for students starting at middle school level. Other titles include: *Mathematicians & computer wizards; Scientists & inventors; Tycoons & entrepreneurs*.

### 241 **Prospects.ac.uk**

Graduate Prospects.

[www.prospects.ac.uk](http://www.prospects.ac.uk)

'Working in partnership with the most prominent official bodies in the field of Higher Education, Graduate Prospects has been bringing students, graduates and recruiters together for over 30 years. It is our close working relationships with HECSU (the Higher Education Careers Services Unit), AGCAS (Association of Graduate Careers Advisory Services), SCOP (the Standing Conference of Principals of Colleges) and Universities UK that allow us to maintain our status as the UK's official graduate careers support service.'

Good database search facility across all current UK undergraduate and postgraduate courses matching subject area, university/college, region, mode of study (full time, part time, distance learning) and optional keywords (e.g. management + technology).

- **GradSchools.com** Educational Directories Inc. [www.gradschools.com](http://www.gradschools.com). 'The leading online resource for graduate school information with over 58,000 programs listed on our site. The site contains a unique and comprehensive directory categorized by curriculum and subdivided by geography.'
  - **Jobs.ac.uk** [www.jobs.ac.uk](http://www.jobs.ac.uk). The UK's leading academic job site.
- 242 Science and technology firsts**  
**L.C. Bruno, ed.** Gale Research, 1996, 636pp. Foreword by Daniel Boorstin, \$95.00. ISBN 0787602566.  
 Arranged into topics: agriculture and everyday life; astronomy; biology; chemistry; communications; computers; earth sciences; energy and weaponry; mathematics; medicine; physics; transportation. Entries are then chronological from the earliest human activities. Gives brief information on discoveries and other firsts focusing on science more than technology.  
 'A must-purchase for every science/technology collection.'  
 (*American Reference Books Annual*)
- 243 Social issues in science and technology: an encyclopedia**  
**D.E. Newton** ABC-CLIO, 1999, 303pp. \$75.00. ISBN 0874369207.  
 Alphabetical list of over 100 topics such as abortion, Bovine Somatotropin and Chernobyl giving the scientific and historical background. The entries provide a summary of differing views, possible impacts on society and results of government decisions. Each entry provides references and some are illustrated. Selected bibliography and general index.
- 244 Studying in France**  
**Égide**  
[www.egide.asso.fr/uk/guide](http://www.egide.asso.fr/uk/guide)  
 'Égide is a non-profit association employing a personnel of 210. It is not grant-supported, but costs its own operating and development budget by charging for its services. This drives a permanent quest for performance and innovation, which goes a long way to explaining the organisation's dynamic reputation ... Égide services include management of study and internship grants, organisation of conferences, reception of celebrity visitors, and arrangements for overseas missions by French experts. Services are provided under contract with the organisations responsible for financing incoming visits or outgoing expert missions. Égide's thus holds a portfolio of 800 partnership contracts with public and private organisations in France and worldwide: research laboratories, universities, schools, companies, foreign governments, state departments and local government organisations. Égide's biggest partnership contract is with the French Ministry of Foreign Affairs.'  
 An excellent site.
- 245 Van Nostrand's scientific encyclopedia**  
**G.D. Considine, ed.** 9th edn, Wiley-Interscience, 2002, 3898pp. 2 v., \$375.00. ISBN 0471332305.  
 Contains over 8000 entries in two volumes on science, medicine, mathematics and technology. Entries start with a simple definition and continue with a detailed explanation and, in some cases, additional reading. Also contains 9000 cross-references, a comprehensive index and almost 5000 diagrams, tables and illustrations. Suitable as a very accessible introduction to many STM topics.  
 '... extensively updated since the last volume ... and it is an amazing accomplishment ... not only does it cover an enormous
- range of topics. it does so thoroughly and descriptively ... almost lyrical in its coverage.' (*Journal of the American Chemical Society*)
- 246 Whitaker's Almanack** [UK]  
 A&C Black.  
[www.whitakersalmanack.com](http://www.whitakersalmanack.com) [DESCRIPTION]  
 The UK's 'ultimate single volume reference source'.  
 Available in several edns: see website.  
 ■ **Who's Who** A&C Black. [www.ukwhoswho.com](http://www.ukwhoswho.com) [DESCRIPTION]. Published annually since 1849 and the first biographical book of its kind. 32,000 short biographies, continually updated, of living noteworthy and influential individuals, from all walks of life, worldwide. c.1000 new entries added every year.
- 247 Who's who in science and engineering: 2005–2006**  
 8th edn, Marquis Who's Who, 2004, 1400pp. \$335.00. ISBN 0837957648.  
[www.marquiswhoswho.com/products/SCprodinfo.asp](http://www.marquiswhoswho.com/products/SCprodinfo.asp) [DESCRIPTION]  
 Alphabetical list of 30,000 scientists, doctors and engineers predominantly from the USA. Entries give field of work, education and scientific achievements. There are also indexes by specialization and by geographic location.
- 248 The World Guide**  
 New Internationalist; distributed by Carel, 2005. Includes CD-ROM, £55.00.  
[www.carelpres.co.uk/wguide03.htm](http://www.carelpres.co.uk/wguide03.htm) [DESCRIPTION]  
 'An alternative reference to the countries of our planet ... Provides a wealth of information on the countries of the world from a refreshingly different perspective. It includes all the facts, history, political and economic analysis you would expect, but also offers information on the issues central to the lives of people in Africa, Asia, the Middle East, Latin America and the Caribbean.'  
 'I must congratulate everyone concerned. The layout is user-friendly, the text is clear and clean, and – most important of all – one can quote the statistics with confidence. The book is now an indispensable tool [on the previous edn].'  
 (*Oxfam*)  
 ■ **The World Factbook Central Intelligence Agency.**  
[www.cia.gov/cia/publications/factbook](http://www.cia.gov/cia/publications/factbook). The classic resource. '2004 marks the 57th anniversary of the establishment of the Central Intelligence Agency and the 61st year of continuous basic intelligence support to the US Government by *The World Factbook* and its two predecessor programs'.
- 249 World guide to scientific associations and learned societies**  
**F. Kirchner, ed.** 9th edn, K G Saur, 2003, 628pp. €298.00. ISBN 3598222645.  
 Provides descriptions of 17,500 international associations and learned societies involved in science, technology and culture. The primary arrangement is by country, then alphabetically. Indexes by association name, subject and personal names.  
 Series: *Handbook of International Documentation and Information*, v. 13.  
 ■ **World guide to trade associations M. Zils, comp.** 6th edn, K G Saur, 2002–2003, 1088pp. €548.00. ISBN 3598207360. 2 v.: v. 1 lists 23,641 associations covering every conceivable field of commercial, service and industrial activity; v. 2 contains details of all chambers of industry and commerce worldwide.

**250 The world of learning: the international guide to the academic world**

54th edn, Europa Publications, 2004, 2448pp. £395.00. ISBN 1857431820.

[www.worldoflearning.com](http://www.worldoflearning.com)

The complete directory and guide to the organizations and institutions throughout the sphere of higher education and learning. Covers: 6200 Universities and colleges; 6600 Research institutes; 3000 Museums and art galleries; 5300 Learned societies; 3500 Libraries and archives; 26,000 Publications. Lists over 200,000 staff and officials.

Available online: see website.

## Handbooks &amp; manuals

**A basis for scientific and engineering translation: German-English-German**

**M. Hann** See entry no. 6393

**The craft of scientific presentations: critical steps to succeed and critical errors to avoid**

**M. Alley** See entry no. 6398

## Keeping up-to-date

**251 AllConferences.Com**

[www.allconferences.com](http://www.allconferences.com)

Covers conferences, conventions, exhibits, seminars, workshops, events, trade shows and business meetings, for each including calendar, dates, location, contact and registration information. Fairly detailed subject classification; good search facilities; relatively non-intrusive advertising.

■ **CONF FIZ Karlsruhe.** [www.fiz-informationsdienste.de/en/DB/conf/\[FEE-BASED\]](http://www.fiz-informationsdienste.de/en/DB/conf/[FEE-BASED]). Details of some 200,000 past, present and forthcoming conferences in science, technology, and medicine.

■ **Forthcoming International Scientific and Technical Conferences** Emerald. £259.00. ISBN 00464686. [www.emeraldinsight.com/fistc.htm](http://www.emeraldinsight.com/fistc.htm) [DESCRIPTION]. Main issue published February each year, followed by supplements in May, August and November. International and UK conferences are listed in chronological order giving date, title, location and contact. Indexes by subject, keyword, location, organization.

■ **Mind: The Meetings Index** [www.interdok.com/mind](http://www.interdok.com/mind). Free access to locate future conferences, congresses, meetings, symposia. Categorized into four sections: Science/technology; Medical/life sciences; Pollution control/ecology; Social sciences/humanities.

**252 Annual Reviews**

Annual Reviews.

[www.annurev.org](http://www.annurev.org)

'Intelligent synthesis of the scientific literature.' Non-profit publisher of leading series of in-depth reviews. All have a title in the format 'Annual Review of ...', and many members of the series are referenced elsewhere in this Volume.

Individual titles are highly cited within the Institute for Scientific Information's JOURNAL PERFORMANCE INDICATORS service: 'Of the 5907 journals assessed by impact factor by the ISI, the Annual Review of Immunology is ranked #1, Annual Review of Biochemistry is ranked #2, and more than half of the Annual Reviews titles are in the top 100 regardless of category.'

When revisiting a topic, it is always worth checking if it has been recently reviewed by one of the Annual Reviews

volumes. Perusal of the chapters in the relevant annual volume as it appears is also an excellent way of keeping abreast of broad developments in a discipline.

**253 The Chronicle of Higher Education [USA]**

The Chronicle of Higher Education, Weekly. \$82.50. ISSN 00095982. <http://chronicle.com>

Wide-ranging coverage with sections: News; Opinion and forums; Careers; Services – each divided into subsections (e.g. Research and Books). Daily updates at the website – which also gives subscribers access to every issue published since 1989, as well as the opportunity to sign-up for a daily news alert.

**254 Current Contents Connect**

Thomson ISI.

[www.isinet.com/products/cap/ccc](http://www.isinet.com/products/cap/ccc) [DESCRIPTION]

'Access to complete bibliographic information of over 7000 of the world's leading scholarly journals and more than 2000 books.'

Available in 7 subject-area editions: Agriculture, Biology and Environmental Sciences; Arts and Humanities; Clinical Medicine; Engineering, Computing and Technology; Life Sciences; Physical, Chemical and Earth Sciences; Social and Behavioural Sciences.

An essay entitled *The ISI database: the journal selection process* was updated in January 2004: 'Recent citation analyses have shown that as few as 150 journals account for half of what is cited and one quarter of what is published. It has also been shown that a core of approximately 2000 journals now accounts for about 85% of published articles and 95% of cited articles. But this core is not static. Its basic composition changes constantly. The ISI editorial team's mission is to identify and evaluate promising new journals that will be useful to ISI subscribers, and to delete journals that have become less useful.'

**255 Inside**

**British Library** 2004. £750.00 [Single User].

[www.bl.uk/services/current/inside.html](http://www.bl.uk/services/current/inside.html) [DESCRIPTION]

Current awareness service covering 20,000 journals giving titles and bibliographic details and abstracts for some journals. Provides access to electronically delivered articles and standard document supply. Now holds details of over 20 million articles, growing by two million new records each year, 8000 every day.

The site gives useful free access to the full list of titles, searchable by keyword, and providing title and ISSN (and BL shelfmark) but no other information.

■ **Articles Direct** [www.bl.uk/services/document/orddocs.html](http://www.bl.uk/services/document/orddocs.html). Allows ordering of articles from the BL without the need to be a registered customer (such as a library). All articles incur a mandatory publication-specific copyright fee, details of which are given in entries in THE BRITISH LIBRARY PUBLIC CATALOGUE.

■ **Inside Conferences** [www.bl.uk/services/bibliographic/datalicensing.html](http://www.bl.uk/services/bibliographic/datalicensing.html). Daily updated file indexing papers published within comprehensive collection of some 14,000 conference proceedings per year received by the BL. Over 450,000 items/annum. Dataset accessible on several online hosts (and details here of other BL datasets).

**256 Nature**

Nature Publishing Group, 1869–, Weekly. £112.00. ISSN 00280836. [www.nature.com/nature](http://www.nature.com/nature)

The leading UK-based periodical covering news of research,

science policy, peer-reviewed papers, book reviews and letters, and much more – including significant international coverage.

## 257 New Scientist

Reed Business Information, 1956–, Weekly. £114.00. ISSN 02624079. [www.newscientist.com](http://www.newscientist.com)

News, features and reviews well written by reporters and correspondents explain the latest developments in science, technology and medicine. UK-based but coverage is international.

Full content is available online for a charge, but – as with many other magazines and journals – there is a free web version which contains news items but often not access to the full-text of the feature articles, unless one is a subscriber. Nevertheless, even for non-subscribers, worth browsing is the section Explore by Subject which – early 2005 – was categorized: Info-tech; Being human; Life; Space; Mech-tech; Earth; Fundamentals; Sex and cloning; Health; Opinion.

*Note Hot Topics*

## 258 NewsNow

NewsNow Publishing Ltd.  
<http://newsnow.co.uk>

'Breaking news in 15+ languages from thousands of the Internet's most important online publications, including international, national and regional titles, newswires, magazines, press releases and exclusively online news sources ... Automatically searching 19,845 news sources every 5 minutes.'

The basic service is free-of-charge; but the publishers 'occasionally add a site to NewsNow that requires users to register (free) or subscribe (paid) to their service in order to read stories ... More and more sites are moving to a registration business model to try and make money from their sites.'

NewsNow is exceptionally easy to use, with users readily able to choose newsfeeds relevant to specific topics: the more generic areas such as science, medical research, engineering; or quite specific topics, including 'Hot Topics' (e.g. Bird Flu; Climate Change). An RSS feed is available for subscribers.

A very good service.

- **The Globe and Mail** [www.globetechnology.com](http://www.globetechnology.com). Good Canadian-based coverage of technology developments.
- **Moreover** [www.moreover.com](http://www.moreover.com). Leading provider of sophisticated information management solutions whose technology 'continually scours the Internet to capture breaking news and business information from thousands of qualified, handpicked sources'. Used by many leading search services.
- **The New York Times** [www.nytimes.com/pages/science](http://www.nytimes.com/pages/science). Relatively very good coverage of science, technology, health, etc. – though texts of articles generally only accessible to registered members of NYTimes.com.
- **Newswise** [www.newswise.com](http://www.newswise.com) [DESCRIPTION]. Primarily for journalists but able to be accessed more generally where the world's leading research

institutions: universities, colleges, laboratories, professional organizations, governmental agencies, private research groups deliver research-based news.

- **SciCentral** [www.scicentral.com](http://www.scicentral.com). Good selective news service – with supporting resources – Editors using the criteria: Reliability; Timeliness of the information; Extent of daily coverage; Multidisciplinary coverage; Leads to follow up information; Presentation and general appeal.
- **SciDevNet: News, views and information about science, technology and the developing world** [www.scidev.net](http://www.scidev.net). Sponsored by NATURE, SCIENCE, and ACADEMY OF SCIENCES FOR THE DEVELOPING WORLD, and funded by a range of agencies and foundations. Well structured and valuable gateway: good sets of briefing documents, as well as up-to-date news.
- **ScienceDaily** [www.sciencedaily.com](http://www.sciencedaily.com). 'Created by Canadian-American science writer/editor Dan Hogan and his wife Michele Hogan in December 1995 ... Produced from the couple's home office outside Washington, DC.' Well presented site, very detailed subject classification, interesting example.
- **WorldNews Network** [www.wn.com](http://www.wn.com). Aims to be 'the most comprehensive, one-stop news resource on the Internet. Today, WN has over 1500 thematic and regional news sites. It also includes the web's most comprehensive news search engine.' Very nice lively site with excellent use of graphics.

## 259 Science

**American Association for the Advancement of Science** 1883–, Weekly. \$135.00. ISSN 00368075.

[www.sciencemag.org](http://www.sciencemag.org)

The leading US-based periodical covering news of research, science policy, peer-reviewed papers, book reviews and letters, and much more – including significant international coverage.

- **Science Books and Films American Association for the Advancement of Science** Bimonthly. \$45.00. ISSN 0098342X. [www.sbfonline.com](http://www.sbfonline.com). 'Every year, SB&F evaluates nearly 1000 books, A/V materials, and software packages for general audiences, professionals, teachers, and students from kindergarten through college.'

## 260 Scientific American

Scientific American, 1846–, Monthly. \$24.97. ISSN 00368733.

[www.sciam.com](http://www.sciam.com)

Contains news items, feature articles, reviews and letters on science, technology and medicine. Explains science (with good illustrations) for the general reader. Substantially enhanced digital version.

## 261 Times Higher Education Supplement [UK]

TSL Education, Weekly. £54.00. ISSN 00493929.

[www.thesis.co.uk](http://www.thesis.co.uk)

Excellent coverage of UK and some worldwide developments in higher and further education. Particularly good at tackling controversial topics in science, medicine and technology. Useful book review section. Free e-mailed 'Research' and 'Editor's' newsletters.



# SCIENCE



# Science

The sequencing here is similar to that in the widely used Dewey Classification scheme; but we have placed CHEMISTRY closer to the BIOLOGICAL SCIENCES and in turn EARTH SCIENCES closer to PHYSICS & ASTRONOMY – both these seeming to reflect

better current research relationships. Also, AGRICULTURE, FORESTRY, FISHERIES & FOOD feels now well situated between BIOLOGICAL SCIENCES and the following subject part MEDICINE.

## Introductions to the subject

### 262 The age of science: what scientists learned in the twentieth century

**G. Piel** Basic Books, 2001, 480pp. \$40.00. ISBN 0465057551.

Engaging story by former Editor of SCIENTIFIC AMERICAN.

Includes coverage of: fundamental forces of nature; subatomic world; cosmology; cell and molecular biology; earth history and evolution of life; human evolution. Useful end notes.

'Highly recommended for all libraries. All levels.' (*Choice*)

### 263 At the fringes of science: with a new epilogue

**M.W. Friedlander** Westview, 1998, 202pp. \$31.00. ISBN 0813390605.

'What makes Friedlander's book especially useful is that he reviews conventional scientific method and shows how scientists examine the hard cases to determine what is science and what is pseudoscience. Emphasizing that there is no clear line of demarcation between science and non-science, Friedlander leads the reader through case after entertaining case, covering the favorites of 'tabloid science' such as astrology and UFOs, scientific controversies such as cold fusion, and those maverick ideas that were at first rejected by science only to be embraced later. There are many good stories here, but there is also much learning and wisdom.

Students of science and interested lay readers will come away from this book with an increased understanding of what science is, how it works, and how the non-scientist should deal with science at its fringes.'

■ **The skeptic: encyclopedia of pseudoscience** **M. Shermer, ed.** ABC-CLIO, 2002, 903pp. \$185.00. ISBN 1576076539. Editor and publisher of *The Skeptic* magazine provides comprehensive introduction to the most prominent pseudoscientific claims made in the name of 'science'.

■ **Society for Scientific Exploration** [www.scientificexploration.org](http://www.scientificexploration.org). Professional forum for presentations, criticism, and debate concerning topics which are for various reasons ignored or studied inadequately within mainstream science. Quarterly journal. Useful set of Links (under *Young Investigators Program*).

### 264 Blackwell guide to the philosophy of science

**P. Machamer and M. Silberstein, ed.** Blackwell Publishing, 2002, 360pp. £18.99. ISBN 0631221085.

Good wide-ranging overview. 15 chapters ranging from *A brief historical introduction to the philosophy of science (and prognostications about its future)* to *Feminist philosophy of science*.

### 265 Chronology of science: from Stonehenge to the Human Genome Project

**L. Rosner, ed.** ABC-CLIO, 2002, 566pp. \$85.00. ISBN 1576079546.

Chronologies divided into subject areas: astronomy, biology,

chemistry, ecology, etc. 16 feature essays on critical scientific achievements. 800 brief biographies of scientists. Diagrams, illustrations, photographs.

'This will be a valuable reference for science and history students, as well as for the casual browser who is interested in science and/or history. Recommended.' (*Library Media Connection*)

■ **Asimov's chronology of science and discovery I.** **Asimov** HarperCollins, 1994, 790pp. ISBN 0062701134. History of science, discovery, mathematics and some technologies from prehistory up to 1993. Readable account by the well known science fiction writer. Separate name and subject indexes.

### 266 Galileo's finger: the ten great ideas of science

**P. Atkins** Oxford University Press, 2003, 420pp. £20.00. ISBN 0198606648.

1. Evolution: the emergence of complexity; 2. DNA: the rationalization of biology; 3. Energy: the universalization of accountancy; 4. Entropy: the spring of change; 5. Atoms: the reduction of matter; 6. Symmetry: the quantification of beauty; 7. Quanta: the simplification of understanding; 8. Cosmology: the globalization of reality; 9. Spacetime: the arena of action; 10. Arithmetic: the limitation of explanation. Prologue – the emergence of understanding; Epilogue – the future of understanding. Further reading. An excellent introduction.

### 267 Higher superstition: the academic left and its quarrels with science

**PR. Gross and N. Levitt** Johns Hopkins University Press, 1998, 328pp. \$20.95. ISBN 0801857074.

Review of and engagement with criticism of science by humanists and social scientists on the 'academic left'. This edn has new afterword by the authors.

*Originally published 1994.*

### 268 History of modern science and mathematics

**B. Baigrie, ed.** Simon & Schuster, 2002, 920pp. 4 v., \$425.00. ISBN 0684806363.

Emphasis is on natural rather than applied sciences. Overviews on biology, mathematics and physics and topical subjects. Bulk of work is essays on history of 23 scientific disciplines including their world-wide historical origins from about the 17th century. Extensive cross-indexing and bibliographies. Interdisciplinary timeline; name and subject indexes.

'If you have a keen interest and want to know anything about anyone who was anything in the history of science from Copernicus to the present day, then this four-volume set is for you; otherwise stay clear.' (*Reference Reviews*)

**269 How to win the Nobel prize: an unexpected life in science**

**J.M. Bishop** Harvard University Press, 2004, 271pp. Originally published 2003, \$15.95. ISBN 0674016254.

Fascinating interweaving of science and biography by 1989 Nobel prize winner (for the discovery, with Harold Varmus, that normal genes under certain conditions can cause cancer). 'Affords us the pleasure of hearing about science from a brilliant practitioner who is a humanist at heart. Bishop's perspective will be valued by anyone interested in biomedical research and in the past, present, and future of the battle against cancer.'

'In these pages Bishop reveals himself as a good writer blessed with enviable clarity, someone sensible and levelheaded who likes people and is enamored of his science.' (*New York Times Book Review*)

**270 Magic universe: the Oxford guide to modern science**

**N. Calder** Oxford University Press, 2003, 756pp. £25.00. ISBN 0198507925.

Well written quite detailed A–Z guide to current science for general readers; c.150 entries cover physics, astronomy, earth sciences, chemistry, biological sciences. Good for browsing.

'The achievement of writing more than 100 engaging and accurate scientific essays is considerable and this is a great book to recommend to anyone who wants a wide introduction to science.' (*Times Higher Education Supplement*)

**271 The modern physical and mathematical sciences**

**M.J. Nye, ed.** Cambridge University Press, 2002, 678pp. £95.00. ISBN 0521571995.

Narrative and interpretative history of the physical and mathematical sciences from the early 19th century to the close of the 20th century. 33 chapters in 6 parts: I. The public cultures of the physical sciences after 1800; II. Discipline-building in the sciences: places, instruments, communication; III. Chemistry and physics: problems through the early 1900s; IV. Atomic and molecular sciences in the 20th century; V. Mathematics, astronomy and cosmology since the 18th century; VI. Problems and promises at the end of the twentieth century. Bibliography. Index.

Chapters represent a variety of investigative and interpretative strategies: 'The practice of history, like the practice of science, is a process that depends on conceptual reorientations and reinterpretations, as well as the invention of new research tools and the unearthing of new facts'.

*Series: Cambridge History of Science, V. 5. Planned is V. 6. The modern biological and earth sciences, and V. 8. Modern science in national and international context.*

**272 The politics of excellence: behind the Nobel Prize in science**

**R.M. Friedman** Times Books, 2001, 379pp. £19.99. ISBN 0716731037.

Based on more than 20 years of investigation into the extensive resources that have become accessible following the decision by the NOBEL FOUNDATION in 1974 to allow researchers to study archive material that is over 50 years old, plus work on a wide range of other archival sources. Insightful review of the frequently political context of great science.

**273 Real science: what it is, and what it means**

**J. Ziman** Cambridge University Press, 2002, 399pp. £18.99. ISBN 0521893100.

Excellent overview of how science really happens from experienced research scientist. Especially good discussion of the frequently subjective nature of peer review processes, and how these are changing as research becomes more collaborative and accountable.

*Originally published 2000.*

**274 Science: a history, 1543–2001**

**J. Gribbin** Penguin, 2003, 672pp. £8.99. ISBN 0140297413.

15 chapters in five volumes by experienced science writer 'from the perspective of someone who has been involved professionally in scientific research, not as a professional historian': 1. Out of the dark ages; 2. The founding fathers; 3. The enlightenment; 4. The big picture; 5. Modern times. Good bibliography. Index.

**275 Who wants to be a scientist?: choosing science as a career**

**N. Rothwell** Cambridge University Press, 2002, 176pp. £14.99. ISBN 0521520924.

'Scientific research is about discovering new things and applying them to improvements in life style for people and animals. But careers in science are now very demanding, requiring much more than a keen scientific mind and practical ability. If you are considering a career in research, have already embarked on your career and want to succeed, are uncertain which route to take, or advise, train or supervise scientists, this book should offer some helpful advice ...'

'A valuable asset to anyone currently in, or contemplating, research, and should be recommended to all science undergraduates.' (*Biochemist*)

## Dictionaries, thesauri, classifications

**276 Composition of scientific words: a manual of methods and a lexicon of materials for the practice of logotechnics**

**R.W. Brown** Smithsonian Institution Press, 2000, 882pp. \$27.95. ISBN 1560988487.

Begins with text on the nature of English language and of Latin and Greek words and a discussion on the formation of words. Most of the book consists of an alphabetical list of words and parts of words in English, Latin, Greek and other languages giving origins, definitions and translations into other languages.

*Reprint of the 1956 edn, which was a revision and update of previous editions, first of which published in 1927.*

'A superb tool for composing scientific names ... And a fascinating work for anyone interested in words.' (*Taxon*)

**277 Dictionary of basic and general terms in metrology**

**Tampere University of Technology**

<http://mit.tut.fi/dictionary>

Multilingual dictionary, based on *International vocabulary of basic and general terms in metrology* (ISO, 1993), and covering a remarkable range of languages: Catalan, Chinese, Czech, Finnish, French, German, Hungarian, Italian, Latvian, Lithuanian, Portuguese, Romanian, Spanish, Swedish, Turkish, Russian. Last updated 2001.

**278 A dictionary of science**

**A. Isaacs** 4th edn, Oxford University Press, 2003, 864pp. £9.99. ISBN 0198607571.

Contains 9000 entries which give simple explanations. Covers biology, chemistry, physics, earth sciences and astronomy. 'The book will appeal not just to scientists and science students but also to the interested lay person. And it passes the most difficult test of any dictionary – it is well worth browsing.' (*New Scientist*)

**Dictionnaire des techniques et technologies modernes: Anglais–Français (Modern dictionary of engineering and technology)**

**J.R. Forbes, ed.** See entry no. 4501

**279 How many?: a dictionary of units of measurement**

**R. Rowlett; University of North Carolina at Chapel Hill**

[www.unc.edu/%7Erowlett/units/index.html](http://www.unc.edu/%7Erowlett/units/index.html)

Especially useful for describing and contrasting the INTERNATIONAL SYSTEM OF UNITS (SI) with the 'English traditional systems'.

**Langenscheidts Fachwörterbuch Technik und Angewandte Wissenschaften: Deutsch–Englisch (Langenscheidt's dictionary technology and applied sciences: German–English)**

**PA. Schmitt, ed.** See entry no. 4503

**280 The new Penguin dictionary of science**

**M.J. Clugston, ed.** 2nd edn, Penguin, 2004, 752pp. £9.99. ISBN 0141010746.

Compact listing of about 7000 terms with diagrams and comprehensive cross-referencing. Covers chemistry, physics, mathematics, molecular biology, biochemistry, human anatomy and computing. Appendices list units, constants, periodic table and elements, amino acids, classification of organisms, derivatives and integrals, and the solar system.

**281 Scientifically speaking: a dictionary of quotations**

**C. Gaither and A.E. Cavazos-Gaither, eds** IOP Publishing, 2000, 496pp. £19.99. ISBN 075030636X.

<http://bookmarkphysics.iop.org>

Quotations are arranged in 87 broad categories and then by name of the person. The source of each quotation is given. Extensive bibliography, subject and author index. Suitable for general readers and for scientists wishing to use a quotation in classroom, presentation or paper.

*Similar volumes available covering mathematics, physics, chemistry, etc.: see website.*

Laws, standards, codes

**282 Bureau International des Poids et Mesures**

[www.bipm.fr/en/home](http://www.bipm.fr/en/home)

The body which ensures world-wide uniformity of measurements and their traceability to the International System of Units. 'It does this with the authority of the Convention of the Metre, a diplomatic treaty between fifty-one nations, and it operates through a series of Consultative Committees, whose members are the national metrology laboratories of the Member States of the Convention, and through its own laboratory work.'

Well organized site (in English). Scientific work covers length, mass, time, electricity, ionizing radiation, chemistry –

and there are collections of information for each of these areas, including excellent up-to-date bibliographies. Also links. A model facility.

■ **Bureau National de Métrologie**

[www.bnm.fr/version\\_anglaise/index.english.htm](http://www.bnm.fr/version_anglaise/index.english.htm). French national metrology body. Pleasant easy-to-use English language version of site.

■ **The International System of Units: SI (Le Système International d'Unités)**

[www1.bipm.org/en/si](http://www1.bipm.org/en/si). Base Units are a choice of seven well defined units which by convention are regarded as dimensionally independent: metre, kilogram, second, ampere, kelvin, mole, candela; Derived Units combine base units according to algebraic relations.

**283 Federal Agency for Technical Regulation and Metrology [RUS]**

[www.gost.ru/sls/gost.nsf](http://www.gost.ru/sls/gost.nsf)

Main directions; structure; standardization; metrology; certification; accreditation; standards catalogue; products and services; links; news. English language versions for much of the content.

**284 Institute for National Measurement Standards [CAN]**

[http://inms-ienm.nrc-cnrc.gc.ca/main\\_e.html](http://inms-ienm.nrc-cnrc.gc.ca/main_e.html)

Canada's national metrology institute. Useful briefing papers on accreditation, calibration, reference materials, etc. with the section on *Time Services* particularly helpful: web services; CBC daily time broadcasts; telephone talking clock; computer time and date; short wave broadcasts radio station; network time protocol; global positioning data; time zones and daylight saving time; frequency and time; FAQs.

**285 International Organization of Legal Metrology (Organisation Internationale de Métrologie Légale)**

[www.oiml.org](http://www.oiml.org)

Intergovernmental treaty organization whose membership includes Member States: countries that participate actively in technical activities, and Corresponding Members: countries that join the OIML as observers. *OIML Bulletin* (PDF), free access downloads, publications, etc.

**286 National Institute of Metrology, China**

<http://en.nim.ac.cn/NIM.htm>

'Founded in 1955, the National Institute of Metrology (NIM) is the highest state-level research center for metrology and the legal metrological technical center of the People's Republic of China, affiliated with the General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ). Based on the constant efforts of about 800 staff for up to half a century, NIM has established 302 items of national primary standards and national standards of measurement, provided 586 verification services and 605 calibration services to the society, and participated in nearly 200 international comparisons. There are nearly 300 prize-winning R & D projects carried out by NIM, and 64 projects were awarded by state-level prizes. NIM will honor its commitment as the nation's leading metrological research body by working to provide the best technical support for trade, industry and society.'

**National Institute of Standards and Technology**

See entry no. 4523

**287 National Measurement Institute [AUS]**

[www.measurement.gov.au](http://www.measurement.gov.au)

New institute, July 2004, formed from the National Measurement Laboratory (CSIRO), National Standards

Commission, and the Australian Government Analytical Laboratories, and continuing their work.

### Questel.Orbit

See entry no. 4531

## Official & quasi-official bodies

### 288 Committee on Data for Science and Technology

[www.codata.org](http://www.codata.org)

Interdisciplinary scientific committee of INTERNATIONAL COUNCIL FOR SCIENCE, which works to improve the quality, reliability, management and accessibility of data resulting from experimental measurements, observations and calculations: including those in the physical sciences, biology, geology, astronomy, engineering, environmental science and ecology. It hosts databases of key values for thermodynamics, fundamental physical constants and a register of materials database managers.

### Department of Energy

United States. Department of Energy See entry no. 4624

### Engineering and Physical Sciences Research Council

See entry no. 4815

### Homeland Security

United States. Department of Homeland Security See entry no. 4420

### 289 House Committee on Science [USA]

[www.house.gov/science](http://www.house.gov/science)

Committee of US HOUSE OF REPRESENTATIVES with Subcommittees on: Environment; Energy; Research; Space. Has jurisdiction over all non-defence federal scientific research and development. Hearings; Bills/publications; FAQs; Kids' page; etc. Winner of a Bronze Mouse in 2003 from the Congress Online Project.

### 290 International Council for Science

[www.icsu.org](http://www.icsu.org)

Non-governmental organization founded to bring together natural scientists in international scientific endeavour. Details of the work of its many committees, including a number of reports and reviews; international news on science policy; PDF downloadable copies of the newsletter *ICSU Insight*. A 'sensitive map' links through to the websites of ICSU's *National Members*; and amongst much other worthwhile information there are details of the 27 International Scientific Unions: many referenced elsewhere in this Volume.

■ **Science international: a history of the International Council of Scientific Unions** F. Greenaway Cambridge University Press, 1996, 279pp. £40.00. ISBN 0521580153.

### 291 United Kingdom Accreditation Service

[www.ukas.org](http://www.ukas.org)

Accreditation is the 'procedure by which an authoritative body gives formal recognition that a body or person is competent to carry out specific tasks'; Certification is 'Procedure by which a third party gives written assurance that a product, process or service conforms to specified requirements'. UKAS is the sole national accreditation body recognized by government to assess, against internationally

agreed standards, organizations that provide certification, testing, inspection and calibration services. Well designed trio of sites: Calibration; General; Testing.

### ■ American Association for Laboratory Accreditation

[www.a2la.org](http://www.a2la.org). Nonprofit, non-governmental, public service membership society. Mission is 'to provide comprehensive services in laboratory accreditation and laboratory-related training. Services are available to any type of organization, be it private or government'.

## Research centres & institutes

### Belfer Center for Science and International Affairs

See entry no. 4550

### 292 Council for the Central Laboratory of the Research Councils [UK]

[www.cclrc.ac.uk](http://www.cclrc.ac.uk)

'Owns and operates the Rutherford Appleton Laboratory in Oxfordshire, the Daresbury Laboratory in Cheshire and the Chilbolton Observatory in Hampshire.' Useful gateway to: Data, library and information services; large scale facilities; research activities; research highlights; the UK's laser, neutron and SR (synchrotron radiation) strategies – all with appropriate links. Educational service. Good site.

### European Research Consortium for Informatics and Mathematics

See entry no. 6025

### 293 German Academies of Science

[www.campus-germany.de/english/2.6.266.html](http://www.campus-germany.de/english/2.6.266.html) [DESCRIPTION]

'Germany is a republic comprising 16 federal states. It therefore doesn't have one singular National Academy of Science but rather several different ones that are interconnected through the 'German Academy of Science' which is based in Mainz. There are 1400 active members in the academy, whose chief goal is to maintain and develop the study of science in Germany. It is particularly dedicated to the discipline of collaborative research.'

### 294 Institute for Reference Materials and Measurements [EUR]

[www.irmm.jrc.be](http://www.irmm.jrc.be)

European Commission body whose mission is 'to promote a common European measurement system in support of EU policies'. 'Competence' section of the website gives access to detailed information on: Reference materials; Isotopic measurements; Neutron data measurements; Radionuclide metrology; Food safety and quality. Similarly detailed descriptions of the Institute's Facilities and Research Areas. Events; news; publications.

### International Institute for Applied Systems Analysis

See entry no. 4555

### 295 National Center for Case Study Teaching in Science [USA]

<http://ublib.buffalo.edu/libraries/projects/cases/case.html>

Aim is 'to promote the development and dissemination of innovative materials and sound educational practices for case teaching in the sciences. Our website provides access to an award-winning library of case materials ...' Includes reasonably up-to-date list of other case study sites on the

world wide web, plus links to science education related associations, discussions lists, journals, projects, reports, etc. There is also a subject-indexed dataset of contact details for US-based Case Study Teachers with, for each person, brief details of their use of the case study method.

### 296 National Physical Laboratory [UK]

[www.npl.co.uk](http://www.npl.co.uk)

UK national standards laboratory, maintaining world-class metrology facilities, and offering calibration services with the highest accuracy possible. Website gives information on its own activities and on measurement and standards generally. Learning Room provides range of resources for children and teachers.

- **National Measurement System** [www.dti.gov.uk/nms/index.htm](http://www.dti.gov.uk/nms/index.htm). The UK's national infrastructure of measurement laboratories.

### 297 Nuffield Foundation [UK]

[www.nuffieldfoundation.org](http://www.nuffieldfoundation.org)

'Our grants fund research and practical work in social policy, education and science. We also support the Nuffield Curriculum Centre and the NUFFIELD COUNCIL ON BIOETHICS.'

- **Nuffield Curriculum Centre** [www.nuffieldcurriculumcentre.org](http://www.nuffieldcurriculumcentre.org). Leads and co-ordinates a range of school-based curriculum development projects and associated activities both within the Centre and in partnership with other institutions. Major work in science, mathematics and technology.

### Online Ethics Center for Engineering and Science Case Western Reserve University

See entry no. 4819

### 298 Science Learning Centres [UK]

#### Great Britain. Department for Education and Skills and Wellcome Trust

[www.sciencelearningcentres.org.uk](http://www.sciencelearningcentres.org.uk)

'The national network of *Science Learning Centres* will act as a catalyst for creating inspiring, intellectually stimulating and relevant science education. By mixing together teachers, technicians, advanced ICT, cutting-edge scientific thinking, industry expertise and high-quality professional development, the Science Learning Centres will provide the perfect conditions for innovation and inspiration.'

9 regional centres plus a recently established national centre. Comprehensive database of forthcoming courses with good search facility. Newsroom.

## Associations & societies

### 299 Académie des Sciences [FR]

[www.academie-sciences.fr](http://www.academie-sciences.fr)

Part of the Institut de France, the Académie develops science policy and international scientific relations, monitors teaching, contributes to the public understanding of science and supports the French scientific language. The website contains papers and reports and information on foundations and awards, membership, committees and links. Some pages in English.

### 300 Accademia Nazionale dei Lincei [ITA]

[www.lincei.it](http://www.lincei.it)

Founded in 1603. Aim is 'to promote, coordinate, integrate and spread scientific knowledge in its highest expression, in the unity and universality of culture'. The Academy is divided into two Classes: Physical, Mathematical and Natural Sciences and Moral, Historical and Philological Sciences.

Each of the two Classes comprises 90 national members, 90 corresponding members and 90 foreign members. Limited English language resources accessible via the website; but an important science organization within Italy.

### 301 American Association for the Advancement of Science

[www.aaas.org](http://www.aaas.org)

Aim is to advance science and innovation throughout the world for the benefit of all people. Website provides extensive information on AAAS programmes, initiatives and policies and on careers and education. Additional information available for members. Publishes the leading periodical *SCIENCE*.

- **Commission on Professionals in Science and Technology** [www.cpst.org](http://www.cpst.org). Founded in 1953 and is a participating organization within AAAS. Produces *Guide to Data on Scientists and Engineers*. Manages extensive and valuable *Clearinghouse for Information on Science, Engineering and Technology Disciplines*.
- **The establishment of science in America: 150 years of the American Association for the Advancement of Science** S.G. Kohlstedt, M.M. Sokal and B.V. Lewenstein Rutgers University Press, 1999, 272pp. \$35.00. ISBN 0813527058.
- **EurekaAlert!** [www.eurekaalert.org](http://www.eurekaalert.org). Forum for research institutions, universities, government agencies and corporations to distribute science-related news to the media and provide public archive. International coverage. Registered reporters, freelancers, journalists can access embargoed news.
- **Next Wave** <http://nextwave.sciencemag.org>. International career development magazine. Articles on research and non-research careers and employment are restricted to subscribers but other material is free. Gives news of factors affecting the science job market.
- **Science NetLinks** [www.sciencenetlinks.com](http://www.sciencenetlinks.com). Free internet-based content for K-12 science educators, including lesson plans and reviewed resources. All the site's content is organized around a set of *Benchmarks for Science Literacy* and classified against 12 broad themes and US grade level.

### 302 Association for Science Education [UK]

[www.ase.org.uk](http://www.ase.org.uk)

Professional association for UK teachers of science.

'Membership of the Association is now of the order of 20,000, with a broad spread of membership from primary and secondary teachers, to technicians, those involved in Initial Teacher Education, and also includes some 3500 student members. The Annual Meeting now attracts in excess of 3500 people and ASE has an enviable reputation worldwide.'

The Association publishes a range of journals and several books each year and the website has a useful *Resources* section covering: awarding and regulatory bodies; professional bodies, institutions and learned societies; scientific suppliers; publishers; industrial education liaison; other organizations. Monthly *ASE Newsletter* is freely available by e-mail.

### 303 Association for Women in Science [USA]

[www.awis.org](http://www.awis.org)

Good source for links to statistics – and much else of value in this arena.

- **Women's history as scientists: a guide to the debates** L.A. Whaley ABC-CLIO, 2003, 252pp. \$85.00. ISBN 1576072304. One of the *Controversies in Science Series* which *American Reference Books Annual* said was 'essential to understanding the exclusion of women

throughout most of history from science, and the reluctance of women to enter science programs'.

### 304 Australian Academy of Science

[www.science.org.au](http://www.science.org.au)

Has defined four major program areas: recognition of outstanding contributions to science, education and public awareness, science policy, and international relations. Website gives information on these areas and includes pages on scientific, mathematical, health and environmental issues in the news, a science program for the seven years of primary school, and an electronic newsletter.

### 305 British Association for the Advancement of Science

[www.the-ba.net](http://www.the-ba.net)

Dedicated to making science and its applications accessible to all. News of events and activities. Members have access to archives, e-mail alerts for events and online debates and surveys. Promotes *National Science Week*.

### 306 British Society for the History of Science

[www.bshs.org.uk](http://www.bshs.org.uk)

Good news and events section. Quarterly PDF newsletter *Education Forum*. Guide to current history of science courses in UK and Ireland.

### 307 Campaign for Science & Engineering

[www.sciencecampaign.org.uk](http://www.sciencecampaign.org.uk)

Object is 'to communicate to Parliament, Government and wider society, a proper appreciation of the economic and cultural benefits of scientific and technological research and development, and of the consequent importance to the nation of adequate funding of research by Government and industry'. Active *What's New* section – providing a good entrée to current issues and concerns. The links page has sub-headings: Academic institution members; Corporate members and sponsors; Scientific society members; Useful/interesting links.

Formerly named *Save British Science*.

- **Science for survival: scientific research and the public interest** P Cotgreave British Library Publishing, 2003, 160pp. £14.95. ISBN 0712308911. Despite all the benefits of science to society, 'the public trusts the science and technology responsible for these benefits less and less. What a mess! Cotgreave's book is a valuable contribution to sorting it out.' *Times Higher Education Supplement*.

### 308 European Federation of National Academies of Sciences and Humanities

[www.allea.org](http://www.allea.org)

Founded 1994 and federation of 52 academies of sciences and humanities in 39 European countries, whose member academies are self-governing communities of scientists and scholars.

'Allea seeks to: promote the exchange of information and experience between academies; offer European science and society advice from its member academies; strive for excellence in science and scholarship, high ethical standards and independence from political, commercial and ideological interests.'

Not a great deal on the website; but what is there is useful.

### 309 Euroscience

[www.euroscience.org](http://www.euroscience.org)

Pan-European association of individuals interested in constructing scientific Europe 'from the bottom-up'. Members are scientists of all disciplines in the public sector, universities, research institutes as well as business and industry. Quarterly electronic newsletter *Euroscience news* contains short articles on science policy and association activities.

### 310 History of Science Society

[www.hsonline.org](http://www.hsonline.org)

Site includes valuable *Guide to the History of Science*: 'Learn about people, institutions, organizations, and publications pursuing science history. Learn about history of science graduate programs. Contact more than 5000 scholars of science around the world. Discover a list of good places to start reading about the history of science ... which may be reproduced in whole or in part without further permission'.

The *HST Database* 'contains over 237,000 professionally collected entries from around the world ... (and is) ... the definitive international bibliography for the history of science, technology, and medicine'. However, this database is only accessible to members of the Society via the site (but is incorporated in RLG's HISTORY OF SCIENCE, TECHNOLOGY, AND MEDICINE database).

### Institute of Measurement and Control

See entry no. 5437

### 311 Japan Society for the Promotion of Science

[www.jsps.go.jp/english](http://www.jsps.go.jp/english)

'Independent administrative institution, established by way of a national law for the purpose of contributing to the advancement of science in all fields of the natural and social sciences and the humanities. JSPS plays a pivotal role in the administration of a wide spectrum of Japan's scientific and academic programs. While working within the broad framework of government policies established to promote scientific advancement, JSPS carries out its programs in a manner flexible to the needs of the participating scientists.'

Well organized (English-language) site with good news section and useful links.

### 312 National Academy of Sciences [USA]

[www4.nationalacademies.org/nas/nashome.nsf](http://www4.nationalacademies.org/nas/nashome.nsf)

'Private, non-profit, self-perpetuating society of distinguished scholars engaged in scientific and engineering research, dedicated to the furtherance of science and technology and to their use for the general welfare ... Members and foreign associates of the Academy are elected in recognition of their distinguished and continuing achievements in original research; election to the Academy is considered one of the highest honors that can be accorded a scientist or engineer. The Academy membership is comprised of approximately 2000 members and 300 foreign associates, of whom more than 180 have won Nobel Prizes.'

The member listings are searchable by name, by scientific field, and by subject keyword, brief details of the work of each member being given – and collectively providing a fascinating overview of work in each subject in recent decades. Also, the listing of deceased members provides, when available, links to individual monographs of Biographical Memoirs.

- **Biographical memoirs** [www.nap.edu/readingroom/books/biomemors](http://www.nap.edu/readingroom/books/biomemors). Essays containing the life histories and selected bibliographies of deceased members of the Academy. They form a biographical history of science in

America: 'an important part of our nation's contribution to the intellectual heritage of the world'.

- **Marian Koshland Science Museum**  
www.koshlandsciencemuseum.org. Opened 2004: 'Uses engaging, interactive exhibits to bring to life the numerous reports conducted by the prestigious *National Academies* every year.'
- **Proceedings of the National Academy of Sciences of the United States of America** Monthly. \$275.00. ISSN 10916490. www.pnas.org. One of the world's most-cited multidisciplinary scientific serials. Publishes cutting-edge research reports, commentaries, reviews, perspectives, colloquium papers, and actions of the Academy.

### 313 National Science Teachers Association [USA]

www.nsta.org

Attractive wide-ranging site supporting NSTA's mission 'to promote excellence and innovation in science teaching and learning for all'. There is a very extensive links section 'Science Websites' recommended by NSTA members and non-members: good concise annotations against each entry. Also 'NSTA Recommends': 'Your best source for thoughtful, objective recommendations of science-teaching materials. Our panel of reviewers – top-flight teachers and other outstanding science educators – has determined that the products recommended here are among the best available supplements for science teaching. Why no negative reviews? They can be fun to read, even to write, but teachers are pressed for time – so only products that are reviewed favorably make their way into NSTA Recommends'.

Much else – some only accessible to NSTA members: an excellent resource.

### 314 New York Academy of Sciences

www.nyas.org

Wide ranging valuable site. Examples of offerings – some parts only accessible to members – include: *Academy eBriefings* Papers etc. from previous meetings; *Annals of the New York Academy of Sciences* Proceedings of a wide variety of international conferences; *Science Alliance* Consortium of 14 universities, teaching hospitals, and independent research facilities in the New York City metro area; *Science EduNet* Over 400 programs offered by science-rich institutions such as museums, universities, and non-profits in the New York and surrounding region.

### 315 Nobel Foundation

http://nobelprize.org/index.html

Clearly laid out and inviting site which offers information on all Prize winners to date, the Nobel Organization, Alfred Nobel, and Nobel events, as well as educational material and games. Consists of more than 9000 static documents, several databases and a number of multimedia productions with Nobel Prize connection.

### 316 Royal Institution of Great Britain

www.rigb.org

200-year-old institution that now concentrates on communicating scientific issues to the general public: especially through events for young people. Transcripts of talks and lectures; details of educational resources and activities.

### 317 Royal Society [UK]

www.royalsoc.ac.uk

Founded in 1660 and the UK national academy of science. Aims to be the champion of top quality science and

technology in the UK. Critical policy advising role. Access to news of its activities, reports and statements on science policy, profiles of its fellows and scientists. Important *Library and Information Services*, especially strong in archival materials.

- **Catalogue of scientific papers** 1867–. 19 v. Cover the years 1860–1863, 1864–1873 and 1874–1900. Entries comprising bibliographic information are arranged by authors' names. Coverage is 1400 scientific and medical transactions of learned societies and reports of their committees.
- **International catalogue of scientific literature** Reprinted 1968 by Johnson Reprint Co, 1902–21. 17 v. – mathematics, mechanics, physics, chemistry, astronomy, meteorology, mineralogy, geology, geography, palaeontology, general biology, botany, zoology, human anatomy, anthropology, physiology, and bacteriology – within each annual volume.
- **Sc1** www.sc1.ac.uk. Created by the Society 'to interest and excite young people about modern scientific research, its significance for today's society, its complex history and the people involved in its development'.

### 318 Royal Society of Canada

www.rsc.ca

'The Royal Society of Canada, The Canadian Academy of the Sciences and Humanities, is the senior national body of distinguished Canadian scientists and scholars. Its primary objective is to promote learning and research in the arts and sciences. The Society consists of approximately 1700 Fellows: men and women from across the country who are selected by their peers for outstanding contributions to the natural and social sciences and in the humanities.'

In October 2004, the Canadian government announced the formation of a Canadian Academies of Science, modelled on the US NATIONAL ACADEMIES.

### 319 Science Service [USA]

www.sciserv.org

'Founded in 1921 ... to advance public understanding and appreciation of science ... Through publications and programs, science fairs and scholarship competitions, Science Service helps young people utilize and strengthen their knowledge in science, math, and engineering. Many credit these experiences as a decisive factor in choosing a scientific career.' The Science Talent Search among its 3000 finalists includes three National Medal of Science winners, nine MacArthur Foundation Fellows, two Fields Medallists and five Nobel Laureates. The International Science and Engineering Fair is 'the world's largest pre-college celebration of science and the world's only international science competition for students in grades 9 through 12'.

- **Science News: the weekly newsmagazine of science** Weekly. \$54.50 [2004]. www.sciencenews.org. Inviting design. A free e-mail newsletter each Saturday lists headline, summary, URL of each article published that week. Archives provides 'free access to the full text of articles that are available online (18 percent of all articles published)'.

## Portal & task environments

### 320 Advanced Placement Digital Library [USA]

**Rice University and National Science Digital Library**

http://apdl.rice.edu [REGISTRATION]

Resources linked to AP content outlines published by the US College Board for biology, physics, and chemistry. The Advanced Placement Program allows high school students to take examinations for credit at college level.

**321 Community of Science**

[www.cos.com](http://www.cos.com) [REGISTRATION]

Internet portal for scientists and researchers at universities, corporations and government agencies worldwide. Services include: *COS Expertise* Database of personal profiles of some 500,000 researchers from 1600 institutions worldwide; *COS Funding Opportunities* Source of grant information; *COS Abstract Management System* Online publishing system. Also provides host access to databases including US Patents, MEDLINE, AGRICOLA and GeoRef. Registration is free for individuals.

**322 Educational Realms: helping you find the pieces**

**Ohio State University**

[www.stemworks.org](http://www.stemworks.org)

Educational REALMS (Resources for Engaging Active Learners in Mathematics and Science) also covers the environment. Useful material, freely available for reproduction, such as lesson plans, bulletins and digests suitable for teachers, parents and lifelong-learners. Links from lists of relevant journals, organizations, etc. New organization created in 2004 after the discontinuation of the federally funded *ERIC Clearinghouse for Science, Mathematics and Environmental Education*.

**323 ENC Online [USA]**

**Eisenhower National Clearinghouse for Mathematics and Science Education**

[www.enc.org](http://www.enc.org)

Good resource for science and maths teachers sponsored by the US Department of Education. Provides curriculum resources, reference services and links to science and maths sites and newsletters. Many pages of projects, lesson topics and activities, professional development resources. ENC mission is 'to identify effective curriculum resources, create high-quality professional development materials, and disseminate useful information and products to improve K-12 mathematics and science teaching and learning'.

- **The Learning Matrix** <http://thelearningmatrix.enc.org>. Peer-reviewed digital resources for use in inquiry and problem-based learning in mathematics, science, and technology classes. Ranges from simulations and tutorials to research articles and video footage. Intended for student teachers.

**324 LESTER: Learning Science and Technology Repository**

**Rice University**

[lester.rice.edu](http://lester.rice.edu)

Forum and clearinghouse for ongoing research and development efforts in educational technology and learning sciences. Data and analytical tools help the learning science and technology community in tracking emerging technologies and formulating informed future agenda.

**325 NSDL Scout Report for Physical Sciences University of Wisconsin, Internet Scout Project and National Science Digital Library**

**Biweekly.**

[scout.cs.wisc.edu/Reports/ScoutReport/Current/](http://scout.cs.wisc.edu/Reports/ScoutReport/Current/)  
'The best new and newly discovered online resources in the physical sciences. Approximately 25 sites are reviewed in each report, covering materials of interest to everyone from kids to higher education, professionals to life-long learners.' Treats physics, astronomy, chemistry, geology and other physical science topics. First-rate service.

**OSTI**

**Office of Scientific and Technical Information** See entry no. 4584

**326 Planet Science [UK]**

**National Endowment for Science, Technology and the Arts**

[www.planet-science.com](http://www.planet-science.com)

Designed 'for all children who study science and the teachers and other adults who support them ... Helping primary and secondary science teachers to teach inspirational science in the classroom is one of the key aims of Planet Science.'

Notable for the Library part of the site – 'the world's best science websites' – and its three newsletters designed respectively for adults, 10 years old and up, and primary school children.

**327 PSIGate**

**University of Manchester and Resource Discovery Network**

[www.psigate.ac.uk](http://www.psigate.ac.uk)

Access to some 11,000 high quality web resources in the physical sciences. Covers astronomy, chemistry, earth sciences, materials sciences, physics, and science history and policy. There is an excellent listing of the PSIGate browse headings, either A–Z alphabetical, or arranged by subject (showing top level headings then sub-levels). The current number of resources in each section is listed in brackets against each heading. Much other valuable information on this rich site.

*Subsets of the site are cited elsewhere.*

- **Science History/Policy Gateway**

[www.psigate.ac.uk/newsite/policy-gateway.html](http://www.psigate.ac.uk/newsite/policy-gateway.html). Over 1000 resources evaluated and described relevant to histories of the constituent subject fields plus on scientific communication, ethics, philosophy, policy, public engagement, technology transfer.

- **Science Timelines** [www.psigate.ac.uk/newsite/timelines.html](http://www.psigate.ac.uk/newsite/timelines.html).

'Notable events in the scientific world from prehistoric times to the present, broken down into separate subject areas. Each timeline contains dozens of key events which have shaped the world as we know it, together with suggested PSIGate searches.'

- **Spotlight** [www.psigate.ac.uk/spotlight](http://www.psigate.ac.uk/spotlight). 'Science articles and news features prepared exclusively for PSIGate by the award-winning science writer David Bradley.'

**328 Schoolscience [UK]**

[www.schoolscience.co.uk](http://www.schoolscience.co.uk)

Biology, chemistry and physics resources for students and teachers arranged by pupil age: 11–14, 14–16 and 16–18 years. Includes written information, pictures, quick questions and some interactivity: all designed to support the UK curriculum and written by teachers. Sponsored by a range of leading institutes and companies.

'Schoolscience, supported by bodies such as the Association of the British Pharmaceutical Industry and the Institute of Petroleum, adds real colour to classroom theory by focusing on applications and processes ... Animation and questions keep you on your toes, although calling the resources 'e-sources' sounds a little highfalutin for what should be standard practice for the presentation of information on educational websites.' (*Sunday Times*)

**329 Science Enhancement Programme [UK]**

[www.sep.org.uk](http://www.sep.org.uk)

Gatsby Technical Education Project which aims 'to raise the achievement and motivation of secondary science students, particularly through practical activities. Its work is a continuing process of development, innovation, dissemination and influence. We are committed to

developing innovative resources that will support effective learning in science, and to providing courses and professional development opportunities for science teachers.'  
Resources; Newsletter (PDF); Links; etc.

### 330 Science Resource Center

Thomson Gale.

[www.gale.com/SciRC](http://www.gale.com/SciRC) [DESCRIPTION]

New service launched Autumn 2004 providing one-stop shop for science classroom teaching. Includes: three core, proprietary reference titles, offering in-depth topic overviews from all science disciplines; 30 additional proprietary reference titles; 150 full-text science magazines; 8000 multimedia records; Links to 50 websites 'all chosen for their authoritative content and relevancy to the curriculum'. The results lists after searching organizes articles by content type – Reference; Magazines; Scholarly Journals; Newspapers and Newswires; Multimedia; Websites – giving for each item a reading level indicator and spotlighting topics of current high interest to students.

■ **Macmillan Science Library** [www.gale.com/pdf/facts/SciLib.pdf](http://www.gale.com/pdf/facts/SciLib.pdf) [DESCRIPTION]. Series of volumes intended for middle-school grades and up, now also accessible in the GALE VIRTUAL REFERENCE LIBRARY. Titles include: Animal sciences; Biology; Computer sciences; Mathematics; Plant sciences; Space sciences.

■ **Opposing Viewpoints Resource Center**

[www.gale.com/OpposingViewpoints](http://www.gale.com/OpposingViewpoints) [DESCRIPTION]. Some 2000 articles from more than 170 titles in the print *Opposing Viewpoints* and other series plus: topic overviews; statistical tables, charts, and graphs; images; full-text periodicals and newspapers; and links to more than 1000 websites.

■ **U X L** [www.gale.com/uxl](http://www.gale.com/uxl). Gale company whose 'goal is to make comprehensive reference books at a reading level of the average seventh grader, focusing on the curriculum topics they study in school and presenting that information in an attractive, inviting way'. Range of titles.

### 331 Science.gov: FirstGov for science [USA]

[www.science.gov](http://www.science.gov)

Gateway provided by consortium of 17 US government science organizations within 12 federal agencies: primarily to websites and (often hard-to-access) scientific databases. Each agency selects its best science information for science.gov. Version 2.0 of the search software was launched in May 2004 and 'introduced real-time relevancy ranking to government science retrieval. This technology, funded by the Department of Energy, helps citizens sort through the government's reservoirs of research and return results most likely to meet individual needs'.

Discovering print & electronic resources

### 332 Bibliotheca Chemico-Mathematica: catalogue of works in many tongues on exact and applied science, with a subject index

H. C. Sotheran and H. Zeitlinger, comps H. Sotheran & Co, 1921–52.

53,489 annotated entries in five volumes (including supplements) compiled from Sotheran's sale catalogues. Details include author, full title, description, date and sale price. Records many old and rare books important in the history of science.

### 333 A catalogue of scientific and technical periodicals, 1665 to 1895

H.C. Bolton Reprint of 2nd edn, Johnson Reprint Corp, 1965, 1247pp. First published 1885.

A title catalogue in alphabetical order excluding transactions of learned societies. Part 1 is a corrected reprint of the 1st edn listing 4954 titles and Part 2 lists over 3600 new titles. There are cross-references from later titles, well known short titles and names of principal editors. Appended chronological table giving publication date of each volume of several hundred journals 1728–1895. Title index, general subject index and location list for titles in US libraries.

### 334 Catalogue of scientific serials of all countries, including the transactions of learned societies in the natural, physical and mathematical sciences, 1633–1876

S.H. Scudder Harvard University, 1879, 358pp. Reprinted New York, Kraus Reprints, 1965.

Lists over 4400 titles arranged by country and town of origin, with indexes of towns and titles and a brief subject index. Excludes serials devoted entirely to medicine, agriculture and technology. Complements H.C. Bolton's *Catalogue of scientific and technical periodicals*.

### 335 Frank Potter's Science Gems: great links to great science resources

F. Potter

[sciencegems.com](http://sciencegems.com)

This US website is designed for 'students, parents, teachers, scientists, engineers and mathematicians'. More than 12,000 science resources are listed by category, subcategory, and grade level. Entries have short annotations to help selection and links are kept reasonably up-to-date. Many useful snippets of information. Worth browsing around.

■ **Martindale's 'The Reference Desk' J.**

**Martindale** [www.martindalecenter.com](http://www.martindalecenter.com). Very wide-ranging resource discovery tool. Somewhat uneven in quality, but lots of useful leads, clearly presented – and with enthusiasm! Jim Martindale develops and maintains the Science Gems site with Frank Potter.

### 336 iFigure

[www.iframe.com](http://www.iframe.com)

Links to very wide range of online calculators and worksheets. These are 'interactive, educational tools that provide information to help in planning, solving and making decisions for a multitude of problems and tasks that come up daily ...'

### 337 Index to physical, chemical and other property data

Arizona State University

[www.asu.edu/lib/noble/chem/property.htm](http://www.asu.edu/lib/noble/chem/property.htm)

Valuable A–Z index to selected library and internet resources that contain chemical, physical, thermodynamic, mechanical, toxicological, and safety data: compiled by the university's Science Reference Room within the Noble Science and Engineering Library.

### Science and Technology Digest

See entry no. 4594

**338 Science experiments index for young people**

**M.A. Pilger** 3rd edn, Libraries Unlimited, 2002, 294pp. \$65.00. ISBN 1563088991.

'Look no further to access the most appropriate science experiments and demonstrations for specific curricular needs. Updated with projects from the latest science books, this index is still the premier resource for tracking down excellent investigative activities perfect for science fairs, classroom presentations, or collaborative lab projects. Organized by subject. Modeling, math applications, social science work, and nutrition resources are just some of the thousands of areas explored. All Levels.'

## Digital data, image &amp; text collections

**339 arXiv.org e-Print archive**

**Cornell University**

<http://arxiv.org>

The 'e-print service in the fields of physics, mathematics, non-linear science, computer science, and quantitative biology'. Site includes Ginsparg's invited contribution to the Conference held at UNESCO HQ, Paris, 19–23 Feb 1996, given during the session *Scientist's View of Electronic Publishing and Issues Raised: 'Winners and losers in the global research village'*.

**340 iLumina**

**University of North Carolina**

<http://turing.bear.uncw.edu>

Digital library of thousands of sharable undergraduate teaching materials for chemistry, biology, physics, mathematics, and computer science. The resources range from images and video clips to entire courses. Resources are catalogued to capture technical and education-specific information. Searching and browsing provide access.

**341 Landolt-Börnstein Online**

Springer.

[www.springeronline.com](http://www.springeronline.com) [FEE-BASED]

The major sets of chemistry, physics and technology data collections, now organized online into: Units and fundamental constants; Elementary particles, nuclei and atoms (Group I); molecules and radicals (Group II); Condensed matter (Group III); Physical chemistry (Group IV); Geophysics (Group V); Astronomy and astrophysics (Group VI); Biophysics (Group VII); Advanced materials and technologies (Group VIII).

The aim is a complete but critical compilation of all of the numerical data and functional relationships of science and technology resulting from physical, chemical, and technological research.

*Available in print: see website.*

**MATLAB**

See entry no. 4852

**342 NASA Technical Reports Server: NTRS**

**National Aeronautics and Space Administration**

<http://ntrs.nasa.gov>

Collects scientific and technical information from NASA's technical report servers and non-NASA sites using the OPEN ARCHIVES INITIATIVE Protocol for Metadata Harvesting (OAI-PMH). October 2004, announced provided access to full text PDF files.

November 2004, largest data subset was that which had replaced former *Center for AeroSpace Information Technical Report Server* database (c. 500,000 records); second largest was physics component of ARXIV.ORG E-PRINT ARCHIVE. Much smaller but significant collections also from BIOMED CENTRAL and the ENERGY CITATIONS DATABASE, as well as data harvested from a further 13 sites.

**343 The Open Science Project**

[www.openscience.org](http://www.openscience.org)

Project is 'dedicated to writing and releasing free and Open Source scientific software. We are a group of scientists, mathematicians and engineers who want to encourage a collaborative environment in which science can be pursued by anyone who is inspired to discover something new about the natural world'. Best populated subjects are: chemistry, mathematics, life sciences.

**344 Science Online**

Facts On File.

[www.factsonfile.com](http://www.factsonfile.com) [DESCRIPTION]

Highly visual resource making good use of hyperlink facilities, entries organized by the *National Science Education Standards* scheme for grades 6–12. Material within each feature – biographies, essays, definitions, diagrams, experiments, and the timeline – is arranged within 14 STM disciplines.

*Publisher also offers Science Experiments On File, as well as many other science resources online, in print or on CD-ROM: check the website.*

## Directories &amp; encyclopedias

**345 American men and women of science: a biographical directory of today's leaders in physical, biological and related sciences**

**P.M. Kalte and K.H. Nemeš, eds** 22nd edn, Gale, 2004, 9100pp. 8 v. \$995.00. ISBN 0787673927.

[www.galegroup.com](http://www.galegroup.com) [DESCRIPTION]

Includes approximately 120,000 living scientists, providing: birthdate; birthplace; field of specialty; education; honorary degrees; current position; professional and career information; awards; memberships; research information; addresses. Vol. 8 of the set is a comprehensive index listing scientists by field, and by state under field.

**346 Biographisch-literarisches Handwörterbuch der exakten Naturwissenschaften (Concise biographic-literary dictionary of the exact sciences)**

**J.C. Poggendorff** Wiley-VCH, 2000. 6 CD-ROM, €1399.00. ISBN 352740306X.

Dictionary first published in 1863 and containing biographic and literary data on around 29,000 natural scientists. This compilation contains its unabridged contents with hyperlinking between the entries. Search functions allow the user to look for people, places of birth and death, years, and subject areas. Pages from the original edition can be accessed from each individual entry.

**347 Black women scientists in the United States**

**W. Warren** Indiana University Press, 1999, 320pp. \$35.00. ISBN 0253336031.

Lives and career paths of more than 100 scientists in the fields of anatomy, astronautics and space science, anthropology, biochemistry, biology, botany, chemistry,

geology, marine biology, mathematics, medicine, nutrition, pharmacology, psychology, physics, and zoology. 'The author writes in a lucid and clear manner. This biographical encyclopedia is a must for libraries serving high schools, the public and colleges.' (*E-STREAMS*)

**348 A century of Nobel Prize recipients: chemistry, physics, and medicine**

**F. Leroy, ed.** Marcel Dekker, 2003, 380pp. \$150.00. ISBN 0824708768.

Arranged in three sections – physics, chemistry, medicine – each starting with an introduction to advances in that subject then listing the laureates by year, beginning in 1901 and ending with 2001. Entries include portrait, birth date and place, description of research carried out, and career development. Style varies slightly in the three sections. Well illustrated.

*Translated from the French.*

'One of the best introductions to the science that merited the Nobel Prize.' (*E-STREAMS*)

**349 Collins biographical dictionary of scientists**

**T. Williams, ed.** 4th edn, HarperCollins, 1995, 602pp. £25.00. ISBN 0004701097.

Standard biographical guide to the world's scientists and technologists. Contains 1300 entries, with subject-index, table of dates and reference-list of other scientists mentioned in the text.

**350 Concise dictionary of scientific biography**

**American Council of Learned Societies** 2nd edn, Scribner's, 2000, 1097pp. ISBN 0684806312.

Single volume abridgement of the 18 vol. *Dictionary of scientific biography* containing over 5400 entries arranged alphabetically by name of scientists who died before 1981. Portraits, lists by nationality and by field with a general index. For scientist bibliographies the reader must refer to the original Dictionary.

■ **Dictionary of scientific biography C.C. Gillispie, ed.; American Council of Learned Societies** Scribner's, 1970–80. ISBN 0684147793. Contributed biographies with bibliographies of original works and secondary sources. Includes six essays on Indian, Babylonian, Assyrian, Egyptian, early Japanese and Mayan science. Index includes 40,000 names not the subject of articles.

**351 Encyclopaedia of scientific units, weights and measures: their SI equivalences and origins**

**F. Cardarelli** Springer, 2003, 848pp. £99.00. ISBN 185233682X.

Contains over 20,000 precise conversion factors and about 5000 definitions covering pure and applied science, technology, medicine and economics. Chapter 2 gives a brief history of the metric system and Chapter 3 details of other modern and ancient measuring systems. The bulk of the book (Chapter 4) is an alphabetical list of units giving a conversion to SI (Système International) equivalent followed by conversion tables by area of application. Chapter 5 gives fundamental constants.

Easy to use despite a confusing 'How to use this book' section – though some may find the relatively small typeface against a dark grey (and occasionally black) background difficult to peruse.

**352 Eric Weisstein's World of Science**

**E. Weisstein** Wolfram Research.  
<http://scicenceworld.wolfram.com>

Covers astronomy, physics, chemistry, and scientific biography with brief hyperlinked definitions and descriptions modelled on the highly successful format of *MathWorld* [q.v.]. However, most areas of the site outside mathematics not recently updated.

**353 The history of science in the United States: an encyclopedia**

**M. Rothenberg, ed.** Garland, 2001, 615pp. \$150.00. ISBN 0815307624.

Coverage is science with some invention, technology, engineering and medicine. Many of the alphabetical entries are for individuals, organizations and bodies but there are also entries for topics such as public health, palaeontology and popularization of science. Two lengthy essays on science during the colonial period and science from 1789 to 1865. The encyclopedia is strong on discussion of explanations of past events.

*Garland also publish History of astronomy (1997) and Instruments of science (1998).*

**354 The Hutchinson dictionary of scientific biography**

**R. Porter and M.B. Ogilvie, eds** 3rd edn, Helicon, 2000, 1196pp. 2 v., £80.00. ISBN 1859863043.

Some 1300 biographies of scientists, mathematicians, engineers and inventors. Also contains short reviews of science and technology. Appendices give list of discoveries with dates, Nobel prize winners, chronology and index.

**355 International encyclopedia of women scientists**

**E.H. Oakes** Facts On File, 2002, 448pp. \$82.50. ISBN 0816043817.

Alphabetical list of 500 women who have contributed significantly to their fields. Each entry has biographical details and an essay of about 750 words. Also contains a short general bibliography and indexes by field of specialization, country of birth, country of major scientific activity, and year of birth. General subject index; chronology.

Relatively strong US coverage; no reading lists with entries.

'It is a clearly written text with excellent detail and truly represents a wide range of scientific fields and accomplishments.' (*E-STREAMS*)

**356 Notable scientists: 1900 to the present**

**B. Narins, ed.** 2nd edn, Gale, 2001. This 5-volume set is considered the updated second edition of *Notable Twentieth-Century Scientists* published in 1995, \$415.00. ISBN 0787617512.

Includes 1600 scientists active in the 20th century in all of the natural, physical, and applied sciences. Entries of 400 to 2500 words give name, birth/death dates, nationality and primary specialization, publications and further reading. Over 400 of the entries have photographs. Includes chronologies of scientific achievement as well as indexes in field of specialization, gender, nationality/ethnicity and subject.

**357 Scientific laws, principles, and theories: a reference guide**

**R.E. Krebs** Greenwood Press, 2001, 402pp. \$77.95. ISBN 0313309574.

Alphabetical arrangement of theories, hypotheses and concepts giving explanations and subsequent developments. Examples include Aristotle's theories, Bernoulli's principle, Crick-Watson theory of DNA and Darwin's theory of evolution. There is a glossary of terms, a bibliography and a general index.

**Wiley survey of instrumentation and measurement**  
S.A. Dyer, ed. See entry no. 5458

## Handbooks & manuals

**Electronic instrument handbook**  
C.F. Coombs, ed. See entry no. 5477

**358 Fundamentals of dimensional metrology**  
R.H. Harlow, C. Dotson and R. Thompson 4th edn, Thomson Delmar Learning, 2003, 592pp. ISBN 0766820718.  
www.delmarlearning.com [DESCRIPTION]

'Introduces the basic principles, techniques, and devices in the field of dimensional metrology, or the science of measurement. Topics include vernier and micrometer instruments, gage blocks, the dial indicator, calibration, and methods for angle measurement. The fourth edition updates the use of laser measurement technology and multisensor systems.'

**359 A guided tour of mathematical methods for the physical sciences**  
R. Snieder 2nd edn, Cambridge University Press, 2004, 507pp. £19.95. ISBN 0521542618.

Interesting approach whereby all the material is presented in the form of problems. Topics covered include vector calculus, linear algebra, Fourier analysis, scale analysis, complex integration, Green's functions, normal modes, tensor calculus, and perturbation theory. 2nd edn contains new chapters on dimensional analysis, variational calculus, and the asymptotic evaluation of integrals

'a splendid book, quite a delight to see mathematical models from a different perspective ... treatment is so smooth that it is hard to know at any instant whether one is learning new tools or assimilating the applications to interesting examples ... excellent.' (*Astronomy & Geophysics*)

**360 Handbook of mass measurement**  
F.E. Jones and R.M. Schoonover Chapman & Hall/CRC, 2002, 250pp. \$99.95. ISBN 0849325315.

History of measurement, calibration, and maintenance of mass standards.

**Instrumentation reference book**  
W. Boyes, ed. See entry no. 5497

**361 International critical tables of numerical data, physics, chemistry and technology**  
E.W. Washburn [et al.], eds; National Academy of Sciences Smithsonian Institution Press, 1926–1933.  
www.knovel.com

Classic and widely-known reference. Contains vast amount of critical data on inorganic and organic compounds, and pure substances. Features physical, thermodynamic, mechanical, and other key properties – a major reference source used by those involved in chemistry, physics, and engineering.

In the online version, select tables are interactive and the entire content is full-text searchable. Additionally, the original 1000-page index is hyperlinked to each entry's appropriate page.

**Mathematical techniques for engineers and scientists**  
L.C. Andrews and R.L. Phillips; SPIE – The International Society for Optical Engineering See entry no. 4858

**Mathematics handbook for science and engineering**  
L. Råde and B. Westergren See entry no. 4859

**362 Measurement theory and practice: the world through quantification**  
D.J. Hand Arnold, 2004, 320pp. £45.00. ISBN 034067783X.  
Presents a unified overview of what measurement is, how it is done, how it has come to be, and what it is used for. Includes chapters on measurement in medicine and the physical sciences.

**The measurement, instrumentation and sensors handbook**  
J.G. Webster, ed. See entry no. 5503

**Statistical design and analysis of experiments: with applications to engineering and science**  
R.L. Mason, R.F. Gunst and J.L. Hess See entry no. 575

**363 Tables of physical and chemical constants**  
G.W.C. Kaye and T.H. Laby, comps 16th edn, Longman, 1995, 611pp. Prepared under the direction of an Editorial Committee, £42.00. ISBN 0582226295.  
Standard tool. Sections are: Units and fundamental constants; General physics (mass and mechanical quantities, materials, heat, acoustics, optics, electricity, astronomy and geophysics); Chemistry (elements, properties of compounds, electrochemistry, chemical thermodynamics); Atomic and nuclear physics (electrons, photon absorption, work function, particle absorption, radioactivity, fission, fusion, nuclei and particles); Miscellaneous engineering data.

**Writing successful science proposals**  
C.L. Folt and A.J. Friedland See entry no. 6423

## Keeping up-to-date

**364 American Scientist: the magazine of Sigma Xi, the scientific research society**  
Bimonthly. \$65.00. ISSN 00030996.

www.americanscientist.org  
Sigma Xi is a non-profit membership society of more than 70,000 scientists and engineers who were elected to the Society because of their research achievements or potential. It has more than 500 chapters at universities and colleges, government laboratories and industry research centres.

Good reflective magazine. Online features include: Site of the week; Author interview; Scientists' nightstand (a leading scientist's recent reading and favourite authors). Book reviews.

Full access to the site is provided without additional charge to Sigma Xi members and other individual magazine subscribers, and to institutional subscribers who arrange site licenses.

**365 FirstScience.com**

[www.firstscience.com](http://www.firstscience.com)

Lively enjoyable site which 'offers science articles in various categories including space, physics, biology, earth science, and technology. As well as a science quiz, links, science and nature poems, games, webcams and comprehensive environmental, space and science news, its aim is to make science fun as well as accessible.'

**366 Public Understanding of Science**

SAGE Publications, 1992–, Quarterly. \$534.00. ISSN 09636625.

<http://pus.sagepub.com>

'The only journal to cover all aspects of the inter-relationships between science (including technology and medicine) and the public. Topics Covered Include: surveys of public understanding and attitudes towards science and technology; perceptions of science; popular representations of science; scientific and para-scientific belief systems; science in schools; history of science education and of popular science; science and the media; science fiction; scientific lobbying; evaluative studies of science exhibitions and interactive science centres; scientific information services for the public; popular protest against science ('anti-science'); science in developing countries and appropriate technology.'

**367 ScienceWeek**

Science Week/Spectrum Press.

[www.scienceweek.com](http://www.scienceweek.com)

Specially written digests 'designed to provide researchers, policy makers, teachers, students, and science writers with access to scientific fields outside their own specialty. But anyone with some background in science will usually find material of interest in each issue ... The reports in ScienceWeek are selected to cross barriers between the sciences, to illuminate breakthroughs, ideas, concepts, policy, and historical aspects.' 18 reports per week.

**368 Scientific Computing World**

Europa Science, Bimonthly.

[www.scientific-computing.com/main.html](http://www.scientific-computing.com/main.html) [REGISTRATION]

'Europe's only magazine dedicated to the computing and information technology needs of professional scientists and engineers ... written by European experts to meet the information requirements of an influential and loyal European audience.'

# Mathematics

Five key types of reference resource can be characterized within mathematics:

- **Academic research** The historical literature is very important – and very specialized; not just the scholarly journal literature but also collections of the works of eminent mathematicians with just a few exemplars referenced here.
- **Learning/teaching** Recent examples are given of maths textbooks, courseware, etc. for the subject fields covered.
- **Policy issues** Particularly because of the serious concern at the shortage of mathematicians, there is an important set of resources referenced.
- **Popularizations** There is considerable interest in mathematics as a recreational activity; nowadays resources of most interest to the non-specialist can be found online within encyclopedias, dictionaries, handbooks, and via the maths-specific web portals.
- **Applied mathematics** These resources generally are cited later within the section treating the relevant application.

Traditionally mathematics is a very book-based discipline, with other resources such as journals, proving to be too specialised for anyone except experts of particular topics. However, thankfully for the student or eager amateur, the

advent of the world wide web has provided an additional source of accessible, useful, and above all, quality sites. Fortunately, also, there are a number of excellent up-to-date print and electronic guides to the literature of mathematics available.

There is such a panoply of specialities in mathematics that it would be all too easy to break the subject down into dozens of groupings. However, as this book is principally intended for non-specialists who we trust will appreciate a somewhat broader brush, we have used only a limited number of subject fields. This has necessitated the drawing together of a few references that, in an ideal world, would perhaps be better suited to separate categories.

Those seriously interested in discovering more about mathematics should make themselves familiar with the *Mathematics Classification Scheme (MCS2000)*. This invaluable taxonomy, constructed by working mathematicians, is an excellent way to disentangle the interrelationships between the various mathematical fields. Mathematics also offers a range of exceptional subject-based encyclopedias, tables, and directories of formulas. These should be the key reference of any new student delving into the discipline. Naturally, the collections and tables will also be of prime importance to the working mathematician.

## Introductions to the subject

- 369 1089 and all that: a journey into mathematics**  
**D. Acheson** Oxford University Press, 2002, 184pp. £12.99. ISBN 0198516231.

<http://home.jesus.ox.ac.uk/~dacheson> [COMPANION]

A rewarding and enjoyable introduction.

'Parts of this book are extremely funny ... [It is] an ideal stocking filler ... An ideal present for friends and relatives who are not mathematicians, but have enough curiosity to spend a gentle afternoon trying to find out what mathematics is about ... Buy this book.' (*London Mathematical Society Newsletter*)

'There are a few mathematicians who succeed in writing popular accounts of their craft without being superficial or condescending. With this book Acheson has joined the best of them.' (*Times Higher Education Supplement*)

- **Mathematics: a very short introduction** I Gowers Oxford University Press, 2002, 143pp. £6.99. ISBN 0192853619. A pleasant inviting read.

- 370 The A to Z of mathematics: a basic guide**  
**T.H. Sidebotham** Wiley, 2002, 474pp. \$69.95. ISBN 0471150452.

'Makes math simple without making it simplistic'. Good reliable introductory guide for 'the millions of people who would love to understand math but are turned away by fear of its complexity'.

- 371 Conversations with a mathematician: math, art, science and the limits of reason: a collection of his most wide-ranging and non-technical lectures and interviews**

**G.J. Chaitin** Springer, 2002, 158pp. £14.99. ISBN 1852335491.

'G. J. Chaitin is at the *IBM Thomas J. Watson Research Center* in New York. He has shown that God plays dice not only in

quantum mechanics, but even in the foundations of mathematics, where Chaitin discovered mathematical facts that are true for no reason, that are true by accident. This book collects his most wide-ranging and non-technical lectures and interviews, and it will be of interest to anyone concerned with the philosophy of mathematics, with the similarities and differences between physics and mathematics, or with the creative process and mathematics as an art.'

'This book is wonderful in both senses of the word ... superlatively good and full of wonder. Nonmathematicians could read it, too, but as I read it I felt glad (and proud) to be a mathematician!' (*The American Mathematical Monthly*)

- 372 Development of mathematics 1950–2000**  
**J.-P. Pier, ed.** Birkhäuser, 2000, 1372pp. £147.50. ISBN 3764362804.

Follow-up to the editor's *Development of mathematics 1900–1950* (1994. 730pp. £75.50. ISBN 3764328215)

which grew out of a colloquium organized by the Luxembourg Mathematical Society in 1992. Aims to provide both a history and a guide through the 'maze of mathematical theories' which have arisen over the last 50 years. Includes viewpoints of more than 40 mathematicians, most of them active researchers and renowned specialists in their fields. Statistics. Bibliography. 200 portraits of mathematicians.

- 373 From here to infinity**  
**I. Stewart** Oxford University Press, 1996, 310pp. £9.99. ISBN 0192832026.

Revised edition of the author's *The problems of mathematics* –

a layman's introduction to modern mathematics by a renowned mathematical communicator.

'An excellent account of what's going on in mathematics right now.' (*Guardian*)

- **What shape is a snowflake? I. Stewart** Weidenfeld & Nicolson, 2001, 224pp. £20.00. ISBN 0297607235. 'A masterpiece ... Not just a book to excite young people about science ... Should also spur their parents to encourage their offspring to pursue mathematics and science with a renewed enthusiasm and vigour.' *Times Higher Education Supplement*.

### 374 The heart of mathematics: an invitation to effective thinking

**E.B. Burger and M. Starbird, ed.** 2nd edn, Key College Publishing, 2005, 850pp. Includes CD-ROM, \$84.95. ISBN 1931914419. [www.heartofmath.com](http://www.heartofmath.com) [COMPANION]

'As you read this book, we hope you will discover the beauty and fascination of mathematics, admire its strength, and see its value to your life.'

'The Heart of Mathematics is a superb book (on the 1st edn).' (*The Mathematical Gazette*)

### 375 A history of mathematics: an introduction

**V.J. Katz** 2nd edn, Addison-Wesley, 1998, 864pp. \$108.00. ISBN 0321016181.

Detailed survey very well written by leading authority – though needs a good grounding in basic mathematics for its full appreciation.

1st edn 1993.

- **Companion encyclopedia of the history and philosophy of the mathematical sciences I. Grattan-Guinness, ed.** Johns Hopkins University Press, 2003. V. 1. 864 pp. \$49.95. ISBN 0801873967; V. 2. 976 pp. \$49.95. ISBN 0801873975. Originally published Routledge, 1994. Companion to the author's *The Norton history of the mathematical sciences: the rainbow of mathematics*.
- **A concise history of mathematics D.J. Struik** 4th edn, Dover Publications, 1987, 288pp. \$8.95. ISBN 0486602559. <http://store.doverpublications.com> [DESCRIPTION]. Good shorter introduction, concentrating on history, rather than on the nature of the mathematics itself.

### 376 The history of mathematics

**J. Tabak** Facts on File, 2004.

Based on the standards of the USA NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS, covers key developments including 'discussions of certain narrowly framed but historically important problems ... to help convey the excitement of mathematical discovery to students'. Bibliography; chronology.

- **Algebra: sets, symbols, and the language of thought** \$35.00. ISBN 0816049548.
- **Geometry: the language of space and form** \$35.00. ISBN 081604953X.
- **Mathematics and the laws of nature: developing the language of science** \$35.00. ISBN 0816049572.
- **Numbers: computers, philosophers, and the search for meaning** \$35.00. ISBN 0816049556.
- **Probability and statistics: the science of uncertainty** \$35.00. ISBN 0816049564.

### 377 The international review of mathematics

2004, 44pp. Downloadable PDF.

[www.cms.ac.uk/irm](http://www.cms.ac.uk/irm)

The UK ENGINEERING AND PHYSICAL SCIENCES RESEARCH COUNCIL (EPSRC) and COUNCIL FOR THE MATHEMATICAL SCIENCES (CMS) jointly organized 'an international review of the standing,

quality and potential of mathematics research in the UK.

This review was the sixth in a series undertaken by EPSRC in collaboration with the relevant subject societies. The aim of the Review was to establish an independent assessment of the quality of UK research, compared with international standards'.

### 378 The language of mathematics: making the invisible visible

**K.J. Devlin** W H Freeman, 1998, 344pp. \$10.00. ISBN 071673379X.

Successfully communicates for those already with some experience of the subject, the details of what maths is and what mathematicians do and why, using a series of topics as illustrations: number theory, logic, motion, geometry, tilings and packings, topology, probability and particle physics. Technically demanding in parts, however.

### 379 Making mathematics count: the report of Professor Adrian Smith's inquiry into post-14 mathematics education [UK]

**A. Smith** The Stationery Office, 2004, 180pp. PDF.

[www.mathsinquiry.org.uk/report/MathsInquiryFinalReport.pdf](http://www.mathsinquiry.org.uk/report/MathsInquiryFinalReport.pdf)

Report of more detailed follow-up to the Roberts' Review SET FOR SUCCESS. Terms of reference were: 'To make recommendations on changes in the curriculum, qualifications and pedagogy for those aged 14 and over in schools, colleges and higher education institutions to enable those students to acquire the mathematical knowledge and skills necessary to meet the requirements of employers and of further and higher education'.

### 380 A mathematician's survival guide: graduate school and early career development

**S.G. Krantz** American Mathematical Society, 2003, 222pp. \$28.00. ISBN 082183455X.

[www.ams.org/bookpages/gscm/index.html](http://www.ams.org/bookpages/gscm/index.html) [COMPANION]

Describes the basic elements of a mathematical education, including choosing a program, gaining admission, exams, advisors, jobs. Krantz is a lively writer whose earlier books – such as *How to teach mathematics*, *A primer of mathematical writing* and *Techniques of problem solving* – all published by AMS, have been very favourably reviewed.

### 381 Mathematics in nature: modeling patterns in the natural world

**J.A. Adam** Princeton University Press, 2003, 360pp. \$39.50. ISBN 0691114293.

<http://pup.princeton.edu/math> [DESCRIPTION]

Describes 'some of the mathematics that lies behind some of the phenomena we encounter in the natural world around us'. Helpfully, limited to objects that can be seen with the naked eye: leaves, trees, spider webs, bubbles, waves, clouds, rainbows, etc. Partly for this reason, a highly engaging introduction to several areas of mathematics. Items in the substantial bibliography are annotated if they are recommended for general interest reading.

URL gives access to details of the range of current maths texts produced by Princeton.

### 382 Mathematics unlimited: 2001 and beyond

**B. Engquist and W. Schmid, eds** Springer, 2001, 1237pp. £30.50. ISBN 3540669132.

'What are the important developments in present-day mathematics? Where is mathematics headed? Our anthology attempts to shed light on these questions.'

64 stimulating chapters by leading experts ‘ranging all the way from mathematical logic to applications of mathematics in the film industry’.

**383 Notable mathematicians: from ancient times to the present**

**R.V. Young, ed.** Thomson Gale, 1998, 612pp. \$120.00. ISBN 0787630713.

300 of the world’s leading mathematicians from the earliest times; includes individuals under-represented in previous resources such as women and minority group members. Each entry 450–1500 words; selected writings and further reading. Good introduction.

‘The stories provide an insight ... into a sampling of individuals whose accumulated mathematical abilities have brought humanity to where it is today. This volume is a great read, and it is highly recommended for any reference collection.’ (*American Reference Books Annual*)

**384 The philosophy of mathematics today**

**M. Schim, ed.** Oxford University Press, 2003, 656pp. £29.00. ISBN 0199262624.

Leading figures deal with ‘foundational issues, from the nature of mathematical knowledge and mathematical existence to logical consequence, abstraction, and the notions of set and natural number. The contributors also represent and criticize a variety of prominent approaches to the philosophy of mathematics, including platonism, realism, normalism, constructivism, and formalism’.

Dictionaries, thesauri, classifications

**385 2000 mathematics subject classification**

**American Mathematical Society** Downloadable PDF.  
[www.ams.org/msc](http://www.ams.org/msc)

Used to categorize items covered by MATHEMATICAL REVIEWS and ZENTRALBLATT MATH. Broken down into over 5000 two-, three-, and five-digit classifications, each corresponding to a discipline of mathematics (e.g. 11 = Number theory; 11B = Sequences and sets; 11B05 = Density, gaps, topology).

- **A gentle introduction to the Mathematics Subject Classification scheme** [www.math-atlas.org](http://www.math-atlas.org). Intended for a person with approximately the training of an undergraduate mathematics student; links lead to pages at the MATHEMATICAL ATLAS website itself which assume somewhat greater familiarity with the sub-disciplines.

**386 Connecting mathematics**  
**University of Cambridge**

<http://thesaurus.maths.org>

Brief explanations of mathematical terms and ideas in English, Danish, Finnish, Hungarian, Lithuanian, Polish, Slovak. Some Spanish. Thumbnail links to all the illustrated entries via a range of galleries (image, flash, cinderella, etc.): an attractive feature.

- **Core subject taxonomy for mathematical sciences education** Math NSDL Taxonomy Committee, 2002.  
<http://people.uncw.edu/hermanr/MathTax>. Arose out of work done by the *American Mathematics Metadata Task Force* ([www.mathmetadata.org/ammf](http://www.mathmetadata.org/ammf)) in 1999–2000.
- **Millennium Mathematics Project** <http://mmp.maths.org>. Members of the MMP team led the team which developed the thesaurus. The Project operates a wide range of maths education and outreach activities including the *NRICH* website offering free mathematics enrichment resources for ages 5–19.

**387 Dictionary of applied math for engineers and scientists**

**E. Previato** CRC Press, 2002, 168pp. \$44.95. ISBN 1584880538. Bridging the mathematical terminology gap for scientists, engineers and computer scientists, this text contains accessible definitions of terms often encountered in other disciplines.

**388 Earliest known uses of some of the words of mathematics**

**J. Miller, ed.**

<http://members.aol.com/jeff570/mathword.html>

Excellent resource, scholarly but well presented. There is a companion *Earliest uses of various mathematical symbols* and for both there is an extensive list of *Sources* – a valuable bibliography in its own right. Just slightly less serious are the pages headed *Ambiguously defined mathematical terms at the high school level*; and there is finally an enjoyable set of *Images of mathematicians on postage stamps*.

**389 HyperMath**

**Georgia State University**

<http://hyperphysics.phy-astr.gsu.edu/hbase/hph.html>

Fascinating hypertextual organization of concepts in applied mathematics with links to their applications to problems in physics and astronomy. ‘It is not systematic or complete in any sense, but is a collection of foundation mathematics principles and applications which were collected as the need was encountered in developing the HYPERPHYSICS material.’

**390 Langenscheidt’s dictionary of mathematics: English, German, French, Russian**

**G. Eisenreich and R. Sube** Langenscheidt, 1996, 1458pp. £175.00. ISBN 3861170744.

[www.langenscheidt.de/english/catalogue/static/physik.html](http://www.langenscheidt.de/english/catalogue/static/physik.html)

35,000 words in each part. Covers fundamentals (incl. mathematical logic; set theory; combinatorial analysis; category theory); algebra; topology; analysis; stochastics; mathematical programming; theory of games; geometry; mathematical instruments; theory of automata.

*Also published are dictionaries of acoustics and physics: see website.*

- **Elsevier’s dictionary of mathematics in English, German, French and Russian** K. Pöeva [et al.], comps Elsevier, 2000, 996pp. £134.00. ISBN 0444829539. Contains 11,652 entries with more than 4750 cross-references (but there are no definitions).

**391 Mathematical quotations server**

**M. Woodward; Furman University**

[math.furman.edu/~mwoodard/mquot.html](http://math.furman.edu/~mwoodard/mquot.html)

Maintained within the mathematics department at the university. ‘Now, by popular demand, you may download the whole collection at once’ (circa 80 printed pages).

**392 Mathematics dictionary**

**R.C. James and A.A. Alchian, ed.** Van Nostrand Reinhold, 1992, 548pp. ISBN 0442012411.

Now out-of-print but good short definitions, with appendices covering some French, German, Russian and Spanish equivalent terms.

**393 A maths dictionary for kids**

**J. Eather**

[www.amathsdictionaryforkids.com](http://www.amathsdictionaryforkids.com)

Animated, interactive, highly colourful and engaging

dictionary explaining over 500 common mathematical terms in simple language.

### 394 PRIME: platonic realms interactive mathematics encyclopedia

Math Academy Online/Platonic Realms.  
www.mathacademy.com/pr/prime

Excellent easily browsable offering with options to search the whole or specific areas of mathematics; to work at elementary or advanced level or both. Very good cross-referencing within definitions. Many entries in the A–Z sequence supported by background reading – and there is much else to discover on the parent site. Discreet commercial sponsorship.

### 395 Russian–English dictionary of the mathematical sciences

R.P. Boas, ed.; American Mathematical Society 2nd edn, 1990, 343pp. \$40.00. ISBN 0821801333.

Well established reference text.

1st edn originally produced by A.J. Lohwater.

## Official & quasi-official bodies

### 396 International Mathematical Union

www.mathunion.org

Non-governmental and non-profit organization promoting international co-operation in mathematics. The bi-monthly *IMU-Net* 'aims to improve communication between IMU and the worldwide mathematical community, by reporting decisions and recommendations of IMU, and highlighting issues that are under discussion ... In addition, IMU-Net will report on major international mathematical events and developments, and on other topics of general mathematical interest'.

Site also has a comprehensive list of links to worldwide mathematical societies, as well as to other maths sites; and there is an impressive *Electronic World Directory of Mathematicians* within which 709 persons were registered, early June 2004.

IMU is a scientific union of the INTERNATIONAL COUNCIL FOR SCIENCE.

- **The Abel Prize** www.abelprisen.no/en. IMU nominates members of the Committee for this international prize for outstanding scientific work in the field of mathematics, founded in 2003, and worth approximately €750,000.
- **Committee for Electronic Information Communication: CEIC** www.ceic.math.ca. Established in 1998 to advise IMU on electronic matters. Range of potentially valuable activities include a newsheet *IMU on the Web* plus a proposed *World Digital Mathematics Library*: see <http://www.wdml.org/publications/comm-jackson.pdf>.
- **Fields Medal** www.mathunion.org/medals/Fields/index.html. Awarded every four years on the occasion of the *International Congress of Mathematicians* to recognize outstanding mathematical achievement for existing work and for the promise of future achievement.
- **Mathematics: frontiers and perspectives V. Arnold [et al.], eds** American Mathematical Society, 2000, 459pp. \$39.00. ISBN 0821826972. IMU sponsored volume for World Mathematical Year and planned to present the state-of-the-art of mathematics at the end of the 20th century.
- **Mathematics without borders: a history of the International Mathematical Union O. Lehto** Springer, 1998, 399pp. £27.00. ISBN 0387983589. Includes bibliography pp 329–366.

- **Math-Net: an international information and communication system** www.math-net.de. Aimed to be a global electronic information and communication system for mathematics providing: results of mathematical research and development; teaching material; information about working mathematicians and mathematical institutions. Limited to date.

## International Union of Theoretical and Applied Mechanics

See entry no. 5885

### 397 NSF: Directorate for Mathematical and Physical Sciences [USA]

National Science Foundation

www.nsf.gov/funding/research\_edu\_community.jsp

Covers mathematics, astronomical science, physics, chemistry, and materials research, each of which is a Division with quite extensive pages covering current programs, research highlights, news, for kids only – including a set of links.

## Research centres & institutes

### 398 Centre for Innovation in Mathematics Teaching [UK]

www.ex.ac.uk/cimt

Established in 1986, and is 'a focus for research and curriculum development in mathematics teaching and learning, with the aim of unifying and enhancing mathematical progress in schools and colleges'.

Projects include:

*International progress in mathematical attainment* Monitors the progress made in the mathematical attainments of pupils (starting in Year 1) in 17 countries worldwide, with the aim of making recommendations for the best practice in teaching mathematics;

*Mathematics enhancement programme* Wide range of material for the teaching of mathematics, covering Years 1 to 11, and aimed at enhancing and encouraging whole class interactive teaching.

- **British Society for Research into Learning Mathematics** www.bsrlm.org.uk.
- **Dictionary of units F. Tapson** www.ex.ac.uk/cimt/dictunit/dictunit.htm. Summary of most of the units of measurement to be found in use around the world today (and a few of historical interest), together with the appropriate conversion factors needed to change them into a 'standard' unit of the SI. Useful historical background.

### 399 Clay Mathematics Institute [USA]

www.claymath.org

Leading institute which – to celebrate the new millennium – named seven *Prize Problems*, focusing on 'important classic questions that have resisted solution over the years'. A \$1 million prize has been allocated for the solution of each. On an interesting site also is offered for sale the CD of *Fermat's Last Tango*.

- **The millennium problems: the seven greatest unsolved mathematical puzzles of our time K.J. Devlin** Granta (Originally published Basic Books, 2002), 2004, 237pp. £20.00. ISBN 1862076863.

**400 Fields Institute for Research in Mathematical Sciences** [CAN]

[www.fields.utoronto.ca](http://www.fields.utoronto.ca)

Leading institute whose 'mission is to enhance mathematical activity in Canada by bringing together mathematicians from Canada and abroad, and by promoting contact and collaboration between professional mathematicians and the increasing numbers of users of mathematics. Thus the Institute supports research in pure and applied mathematics, statistics and computer science, as well as collaboration between mathematicians and those applying mathematics in areas such as engineering, the physical and biological sciences, medicine, economics and finance, telecommunications and information systems.'

Established in 1994 with the *Centre de Recherches Mathématiques* the *CRM-Fields Prize* to recognize exceptional work in the mathematical sciences. Audio and/or slides available for talks given at the Institute. Education Programme resources: e.g. *On-line mathematics: visions and opportunities, issues and challenges, and recommendations* (2001, PDF).

■ **International Mathematical Science Institutes**

[www.fields.utoronto.ca/aboutus/MSI.html](http://www.fields.utoronto.ca/aboutus/MSI.html). International consortium of research institutes in the mathematical sciences that run thematic research programs and have large visitor programs. Meetings are normally held in conjunction with major international meetings.

**401 Institute for Mathematics and its Applications** [USA]  
**University of Minnesota**

[www.ima.umn.edu](http://www.ima.umn.edu)

Established in 1982 by the NATIONAL SCIENCE FOUNDATION, as a result of a national competition. Mission is 'to increase the impact of mathematics by fostering research of a truly interdisciplinary nature, linking mathematics of the highest caliber and important scientific and technological problems from other disciplines and industry'. Quarterly *Update* treats various areas of maths application, as well as reporting on the work of the Institute. Considerable details of papers etc. given at workshops accessible on website.

■ **IMA volumes in mathematics and its applications**

Springer-Verlag, 1986–. [www.ima.umn.edu/springer/volumes.html](http://www.ima.umn.edu/springer/volumes.html) [DESCRIPTION]. (V. 139, 2004).

**402 Isaac Newton Institute for Mathematical Sciences** [UK]

[www.newton.cam.ac.uk](http://www.newton.cam.ac.uk)

'Now firmly established as the UK's national research institute for mathematics.' Funded by the ENGINEERING AND PHYSICAL SCIENCES RESEARCH COUNCIL and a wide range of public and private sector donors, including the University of Cambridge, where it is based.

'From its inception, it was intended that the Institute should be devoted to the Mathematical Sciences in the broadest sense. In this respect the Institute differs significantly from similar institutes in other countries. A key criterion in the selection of scientific programmes is the extent to which they are interdisciplinary, bringing together research workers with very different backgrounds and expertise. Sometimes a single mathematical topic may attract a wide entourage from other scientific fields. In the first 10 years there have been 22 Fields Medalists and 8 Nobel Prize winners attending Institute programmes.'

**403 Mathematical Sciences Research Institute** [USA]

[www.msri.org](http://www.msri.org)

Exists to 'further mathematical research through broad programs in the mathematical sciences and related activities. Founded in 1982 the Institute has been primarily funded by the NATIONAL SCIENCE FOUNDATION with additional support from other agencies and sponsors'. Site provides access to extensive series of lectures via *Streaming Video*, one of the main goals of this offering being to discover efficient uses of Internet technology for mathematical communication. Also has a *Journalist in Residence Program*.

**404 Mathematics Education Centre** [UK]

<http://mec.lboro.ac.uk>

Mission is 'is to become an internationally-recognised centre of excellence in the learning, teaching and support of mathematics and statistics in higher education'. Good example of UK-based work in this area. Provides access to *Mathcentre* which 'offers students quick reference guides, practice and revision materials, workbooks and online practice exercises on many branches of mathematics, including: Algebra, Arithmetic, Complex Numbers, Differentiation, Finance, Functions and Graphs, Geometry, Guides and Case Studies, Integration, Matrices, Numeracy Skills, Sequences and Series, Statistics, Trigonometry and Vectors'.

■ **Gallery of Mathematical Images**

<http://info.lboro.ac.uk/departments/ma/gallery/index.html>. Created by the university's mathematics department.

## Associations &amp; societies

**405 American Mathematical Society**

[www.ams.org](http://www.ams.org)

'Founded in 1888 to further mathematical research and scholarship, the American Mathematical Society fulfils its mission through programs and services that promote mathematical research and its uses, strengthen mathematical education, and foster awareness and appreciation of mathematics and its connections to other disciplines and to everyday life.

'The Society has over 28,000 individual members and 550 institutional members in the USA and around the world. Programs and services for AMS members and the mathematical community include professional programs such as meetings and conferences, surveys, employment services; publications including *Mathematical Reviews* (a database of nearly 2 million items covering over 60 years of mathematics literature), journals, and over 3000 books in print; support for Young Scholars Programs and the Mathematical Moments program of the Public Awareness Office; resources such as *MR Lookup* for researchers and authors; and a Washington office that connects the mathematical community with the broader scientific community and with decision makers who determine science funding.'

Exceptionally clear and well structured website: a joy to use! (tempered only by *Google* and similar generic tools never being the best search engines for domain specific sites). Amongst a wealth of information, there is the extensive list of resources *Math on the Web* noted below, with detailed coverage of the scholarly journals of mathematics (but the updating schedule across the service is quite variable). The *What's New in Mathematics* pages are also worth highlighting.

■ **AMS Bookstore** [www.ams.org/bookstore](http://www.ams.org/bookstore). Includes much useful material apart from details of the Society's publications themselves; e.g.

Where to find AMS books; Titles recommended for classroom use; Book series distributed by the AMS (from other publishers).

- **Combined Membership List** [www.ams.org/cml](http://www.ams.org/cml). Names/addresses of members of AMS, and Mathematical Association of America, Society for Industrial and Applied Mathematics, American Mathematical Association of Two-Year Colleges, Association for Women in Mathematics, Canadian Mathematical Society.
- **Directory of mathematics preprint and e-print servers** [www.ams.org/global-preprints](http://www.ams.org/global-preprints). Aims to provide URLs and e-mail contacts for all mathematical preprint and e-print servers throughout the world. Divided into *Umbrella*: covering all areas of maths; *Special subject*; *Institute and departmental*; *Retired*: no longer operating.
- **Math on the web** [www.ams.org/mathweb](http://www.ams.org/mathweb). Extensive LINKS divided into: Guides; Online; Offline (document delivery, libraries, etc.); Organized (by classification; topics; history); People; Reference (dictionaries, handbooks, serials); Servers (institutions, associations); Related (tools etc.).
- **Mathematics Books Online** [www.ams.org/online\\_bks/online-books-web.html](http://www.ams.org/online_bks/online-books-web.html). Aims to provide a comprehensive gateway.

**406 Association for Women in Mathematics [USA]**  
[www.awm-math.org](http://www.awm-math.org)

A non-profit organization 'encouraging and promoting females in the mathematical sciences'. Extensive website includes information on the Association's professional development and outreach programmes, as well as resources and opportunities for mathematical students to become involved with activities.

**407 Australian Mathematical Society**  
[www.austms.org.au](http://www.austms.org.au)

The 'national society of the mathematics profession in Australia, promoting and developing mathematical knowledge'. Good set of links to sites providing information about Australian mathematics.

**408 British Society for the History of Mathematics**  
[www.bshm.org](http://www.bshm.org)

Unsophisticated site but including much valuable material – albeit not necessarily recently updated: for instance, a *Mathematical Gazetteer of the British Isles* providing 'information about where mathematicians were born, lived, worked, died, or are buried or commemorated'.

**409 Canadian Mathematical Society**  
[www.cms.math.ca](http://www.cms.math.ca)

Pleasant easily used well laid out site with good sets of resource lists – especially *Links to Mathematical Societies around the world* – alongside news of activities of the society itself.

**410 Conference Board of the Mathematical Sciences [USA]**  
[www.cbmsweb.org](http://www.cbmsweb.org)

'Umbrella organization consisting of sixteen professional societies all of which have as one of their primary objectives the increase or diffusion of knowledge in one or more of the mathematical sciences. Its purpose is to promote understanding and cooperation among these national organizations so that they work together and support each other in their efforts to promote research, improve education, and expand the uses of mathematics.'

**411 Council for the Mathematical Sciences [UK]**  
[www.cms.ac.uk](http://www.cms.ac.uk)

Established in 2001 by the INSTITUTE OF MATHEMATICS AND ITS APPLICATIONS, the LONDON MATHEMATICAL SOCIETY and the ROYAL STATISTICAL SOCIETY to provide a forum for the three societies.

- **Careers in Mathematics** [www.mathscareers.org.uk](http://www.mathscareers.org.uk). Aims to provide 'comprehensive access to information on careers in mathematics and statistics, and on the role of mathematics and statistics in careers in many other sectors, from the sciences and engineering to business and finance'. [[www.scenta.co.uk](http://www.scenta.co.uk)].
- **Institute of Mathematics and its Applications** [www.ima.org.uk](http://www.ima.org.uk). UK professional and learned society for qualified and practising mathematicians. Its mission is 'to promote mathematics in industry, business, the public sector, education and research'. Now has over 5000 members. Useful website.
- **Mathematical Association** [www.m-a.org.uk](http://www.m-a.org.uk). UK organization which 'exists to bring about improvements in the teaching of mathematics and its applications, and to provide a means of communication among students and teachers of mathematics'.

**412 European Mathematical Society**  
[www.emis.de/ems-general.html](http://www.emis.de/ems-general.html)

Seeks to 'further the development of all aspects of mathematics in the countries of Europe, in particular aiming to promote research in mathematics and assisting with problems of mathematical education'.

- **Electronic Library of Mathematics** [www.emis.de/ELibM.html](http://www.emis.de/ELibM.html). Impressive portal to online journals, article collections, monographs, and other electronic resources. Access is generally free, except for some periodicals with a 'moving wall': a certain delay period after which resources become freely available.
- **Euler: your portal to mathematics publications** [www.emis.de/projects/EULER](http://www.emis.de/projects/EULER). Originally funded by the EU; little activity since 2002.
- **Euro-Math-Job: vacant academic positions in the European departments of mathematics and statistics** [www.maths.lth.se/nordic/Euro-Math-Job.html](http://www.maths.lth.se/nordic/Euro-Math-Job.html). Simple well designed gateway to job pages around Europe set up and maintained by the various member societies of the EMS.
- **European Mathematical Information Service** [www.emis.de](http://www.emis.de). Entrée to a wide range of services – beyond and including those listed here. Supported by EMS.
- **European Research Centres on Mathematics: ERCOM** [www.crm.es/ERCOM](http://www.crm.es/ERCOM). Committee under EMS consisting of Directors of European Mathematical Research Centres.
- **The Jahrbuch Project: electronic research archive for mathematics** [www.emis.de/projects/JFM](http://www.emis.de/projects/JFM). Database of *Jahrbuch über die Fortschritte der Mathematik* – which reviewed more than 200,000 mathematical publications during the period 1868–1942 – together with a digital archive of the most important mathematical publications for the same period.

**413 European Women in Mathematics**  
[www.math.helsinki.fi/EWM/index.html](http://www.math.helsinki.fi/EWM/index.html)

'Affiliation for women bound by a common interest in the position of women in mathematics.' Founded in 1986; office in Helsinki, Finland. Meetings, news, mentoring, etc. Early 2005 there were participating members from almost 30 European countries.

**414 London Mathematical Society**  
[www.lms.ac.uk](http://www.lms.ac.uk)

Founded in 1865 this Society is the major British learned society for mathematics. It was established for the 'promotion and extension of mathematical knowledge, undertaking various publications and holding regular