



Michael Boylan

1949 – 2002

Michael Boylan died suddenly but peacefully on his way to work on 25th January.

Michael joined the University in 1969 as a technician in the Genetics Department, but left in 1970 to work in industry and further his career in the developing world of computers. Mainframe computers of that era had to be attended 24 hours a day and Michael was able to juggle unsocial hours supporting them with his pursuit of academic qualifications. He graduated with an Honours degree in Psychology and Computer Science from Stirling University in 1979. He returned to Edinburgh in 1984, to join Management Information Services as a systems programmer.

One of Michael's joys in working in Old College was the proximity of James Thin's antiquarian section and numerous charity shops. He had a passion for books: he once bought a complete Encyclopaedia Britannica at a Scouts' jumble sale and had to get a friend to take it away for him, since his own car was already full of books.

In 1992 Michael moved to the newly formed Facilities Management Division of EUCS, where he helped to move central administration from the old IBM computer to a Unix system. Since then, he gave general Unix support, ran the backup service for departmental Unix systems, and managed the University's file archiving service. He worked rigorously, coming in on many evenings and weekends to ensure that the backup jobs had completed in time for the next day. His last heroic work was to transfer the EMAS archive from over 4,000 ageing magnetic tapes to modern media, which he undertook painstakingly and meticulously to ensure that all the files were safely copied. Michael had got this work to the final reconciliation phase, and was within days of finishing it when he died.

Michael had an endless supply of anecdotes and amusing, often hilarious, tales. Underneath this jovial exterior lay a considerate, sympathetic and thoughtful friend: kind, generous and helpful. He could engage in conversation on many topics but perhaps his favourites were the songs and music of Scotland. His knowledge in this field was extraordinary, and many have benefited from his expertise. The huge turnout at his funeral showed how valued Michael was by friends and colleagues, and we extend our deepest sympathies to his family for their very sad loss.

There is a memorial page for Michael at <http://www.ucs.ed.ac.uk/fmd/unix/ug/members/mjb/>

If you would like to add your memories or tributes, please email them to michael-tribute@ed.ac.uk.

*Keith Farvis, George Robertson (EUCS)
Jack McAulay (CITS)*

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Learning Technology Supplement no. 7

Windows XP

After Microsoft launched its new operating system Windows XP in late October last year, EUCS advised that it had not evaluated its operation in the local networking environment nor, during November, was it clear that existing applications would run unchanged with XP. XP Pro is a development of Windows 2000 Pro with particular enhancement in the areas of security and manageability. Both XP and Windows 2000 are claimed to be more reliable than Windows 98.

Now that EUCS has had time to evaluate XP and to train support staff we are able to recommend XP Pro in general terms for purchasers of new PCs, unless there are reasons to choose Windows 2000 Pro either for reasons of software and device compatibility or for consistency across a department; the Home version of XP should *not* be acquired for University use as it was not designed for a networked environment.

However there are still reservations about applications software running on XP and device driver availability for XP, so potential purchasers should confirm XP compatibility with the suppliers of the software or devices they wish to use before committing to a purchase. EUCS will endeavour to collate compatibility information on EUCSinfo at <http://www.ucs.ed.ac.uk/usd/iss/ol/os/windows.html>

The most cost-efficient route to obtaining XP Pro on a new machine depends on whether or not a Microsoft Campus Agreement is in force. Those covered by a Campus Agreement should consult their user support team; others should specify that XP Pro should be pre-installed.

There continues to be no need for users of Windows 98 or NT4 (or Windows 2000) to consider upgrading their systems at present, particularly as both the minimum and

recommended hardware requirements for XP are significantly greater than for earlier systems. In general EUCS advises against upgrading the operating system on an existing PC as the process is non-trivial and time-consuming and often requires applications software also to be updated.

Current proposals for the open-access laboratories, subject to confirmation, are that they continue to use NT4 until the summer of 2003 and then move to XP Pro (see following article).

David Muxworthy (EUCS)

Annual upgrade programme for the open-access labs

The Communications and Information Technology Committee—C&ITC—has approved the Computing Services plan for the open-access Windows labs. These will continue to use Windows NT4 for one final year, and will be moved to Windows XP Pro by October 2003. The full proposal is presented in the ‘futures’ section of EUCSinfo, at <http://www.ucs.ed.ac.uk/futures/>

We will therefore be making only essential changes to the Windows NT4 environment this Summer. We ask departments to contact us as soon as possible if their courses will require new or updated software for next session.

It is not too soon to start planning now for session 2003/04. Do you have applications in the open-access labs which you expect to continue using through 2003/04? If so you should check with the suppliers about compatibility with Windows XP Pro, to make sure that an XP-compatible version is ready by Summer 2003.

Any queries or feedback about the lab software should be sent

to Christine Rees (email C.Rees@ed.ac.uk); comments on the strategy itself should be sent to Andrew McKendrick (email A.McKendrick@ed.ac.uk).

Christine Rees (EUCS)

Computing lab survey

Every year, EUCS runs a survey to find out how well the open-access computing labs are meeting their users’ needs, and what difficulties are encountered. Last summer’s survey was the most successful yet in terms of the number of responses it generated, thanks to the switch from a paper questionnaire to an online one.

As usual the results helped us to make several improvements and provided useful input to help us plan future upgrades. The results of the 2001 survey are in EUCSinfo, at <http://www.ucs.ed.ac.uk/fmd/labs/labsurvey2001.html>

Mike Baillie (EUCS)

Office 2002 and Access 2000

Users of Microsoft Access 2000 on PCs that have Office 2002 loaded should be aware of the potentially serious problem identified in Technet article Q304548.

The effect of the bug is that your Access 2000 database will be trashed and not repairable if you paste a form, report or standalone module into the database then close without specifically recompiling the code. Recompiling the code before closing the database will remove the problem.

Further information is available from Microsoft by searching for the string Q304548 in its Access 2000 knowledge base at <http://support.microsoft.com/default.aspx?scid=fh;en-gb;kbinfo>

If you have questions on this problem, email dbhd@ed.ac.uk.

Ed Dee (EUCS)

Apple in view

MacSIG back in business

Apple has released several exciting new products recently, which demand a closer look from computer users and support staff.

The operating system, OS X, has been completely overhauled and modernised, and both it and the new applications which exploit it have matured considerably since it first appeared around a year ago. The hardware too is evolving rapidly, with the professional desktop computers getting extremely fast, the iBook portable getting a bigger screen, and the new iMac once again redefining what a computer looks like!

It is therefore none too soon to consider what impact the new products might have on the University's many Mac users, and for this reason we have decided to hold a special meeting of the Mac Special Interest Group, MacSIG, which hasn't met for several years.

The main topic for discussion will be "What are we going to do about MacOS X", and Richard Bennett and Stuart Anderson of Apple UK will be there to talk about new developments, demonstrate new products and answer questions.

The MacSIG meeting is 2-4pm on **3rd April**, in the meeting room and Brenda Moon Room of the Wolfson suite in the Main Library. Anyone is most welcome to attend, but it would help us to ensure that we have enough room if you could let us know that you plan to be there (email Toby@ed.ac.uk).

If you would like further information, or have suggestions for topics to be discussed or demonstrated, please email Gillian.Kirkwood@ed.ac.uk.

Gillian Kirkwood (EUCS)

Learning Technology Supplement

The 7th edition of the LTS, produced by MALTS, is included in this issue of *BITs*. We hope you enjoy reading it, and that you find useful ideas in it for using computers to help with your teaching. (Feedback is welcome: please email Nora.Mogey@ed.ac.uk)

Nora Mogey (MALTS)

Internet training materials

We announced in January's *BITs* the availability of Netskills training materials to members of the University. The modules consist of a presentation (with speaker's notes) and hands-on exercises in Microsoft Word and PowerPoint files which you can download from the Netskills site. Most of this material is designed for face-to-face training, but there are several self-paced training modules. Further details are given at <http://www.ucs.ed.ac.uk/usd/iss/ol/comms/netskills.html>

We have received updated information from the Netskills team at Newcastle University. New modules released:

- Blackboard: Assessment Tools
- Blackboard: Student Management, Grading and Other Issues
- Using the Internet for Learning & Teaching in Further Education
- Creating Web Pages using Dreamweaver 4
- Page Design and Site Management in Dreamweaver 4
- Creating a Corporate Look using Dreamweaver

The popular module 'Web Pages from Scratch' has been replaced by two modules:

- Creating Web Pages: Basic HTML
- Creating Web Pages: Further HTML

John Murison (EUCS)

EUCS Training Courses

Computing Services runs courses for staff and postgraduate students throughout the academic year. In most cases these are provided at no charge. Details are published in the EUCS publication *Courses in Computing* (Spring–Summer 2002), in *Staff Development Opportunities* (February–August 2002), and online at <http://www.ucs.ed.ac.uk/usd/iss/courses/>

If you haven't looked at our schedule of courses lately, please take a moment to browse through them. We seek to keep the courses offered, and their content, up-to-date and relevant to the needs of the University. In Communications, for example, there have been some recent developments:

- The introduction of a course, split into two half-days, on the popular learning environment WebCT, led by Nora Mogey of MALTS. This two-part course is next scheduled to run on 29th April and 17th May.
- The revision of the full-day course 'HTML and publishing on the World Wide Web'. This course, which is scheduled to run on 3rd April, 1st May, 30th May and 9th July, now introduces HTML in the morning and then provides an introduction to a Web editor (attendee's choice of Dreamweaver, HoTMetaL or FrontPage) in the afternoon.

Please let us know if you would like us to run courses on topics not currently in our schedule. It usually takes time for us to organise a new course, and we may not have the resources, but at the very least it is valuable for our forward planning to know what our colleagues want. I would be pleased to hear from you (email John.Murison@ed.ac.uk).

John Murison (EUCS)

Web proxy cache service

Growth of the cache services

The use of the World Wide Web continues to grow, and with the advent of ResNet, the student residences network, there has been a marked increase in the amount of Web traffic being processed by the proxy cache services. The graphs below show the number of Web document accesses over 2001 on the free and charged cache services and compare them to the figures for the previous year. Each year we have seen an effective doubling of Web accesses, and with an average 'hit rate' of about 25% it can be seen that the proxies provide a very useful function in speeding up the delivery of a significant number of commonly accessed Web documents and **reducing the network bill to the University.**

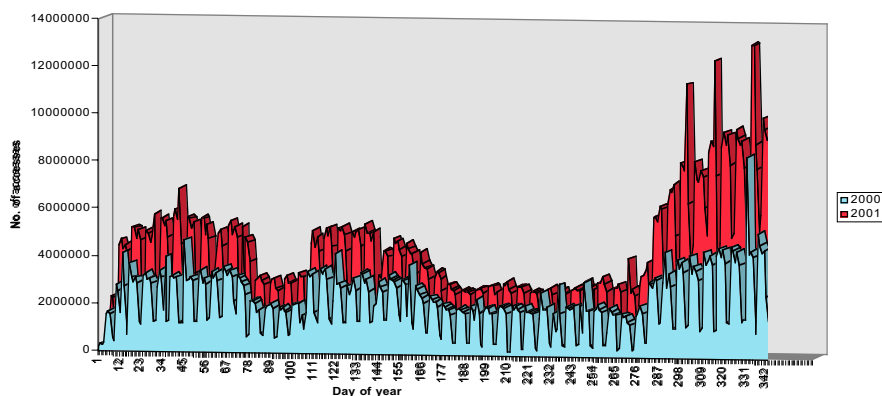


Fig 1. free cache accesses for 2000 and 2001

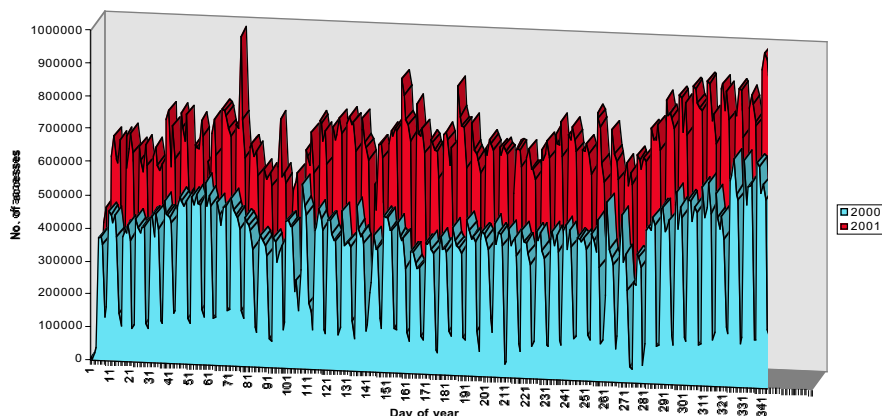


Fig 2. charged cache accesses for 2000 and 2001

Upgrades

We constantly review the provision of the systems providing the proxy services, and as a result of the growth described above have recently embarked on a programme of upgrades. Both free and charged cache services have new operating system software and a new version of the 'squid' proxy software. The machines running the free cache service have had more memory installed in them. These upgrades should improve performance and make administration of the services simpler.

Authenticated access

Previously, only computers connected to the University's network or through the University's dialup service could use the proxies, in order to prevent unauthorized hijacking of the University's resources: people who dialled in through third-party ISPs could not use the University's proxies from home. This often led to confusion, and could mean having to swap proxy configurations on laptops which moved between work and home. EUCS has

now solved this problem by providing authenticated connections to the University's free cache service, which makes Web connections from home computers appear to come from within the University network. One advantage of this is that Web resources restricted by address, such as electronic journals and secured Web servers, become available.

The authenticated connections will be enabled on 10th March 2002 and will require the same usernames and passwords as the staff and student mail servers. From then on you will be able to use the same Web browser configuration at home and at work. When you first open up your browser you will be prompted for a username and password. After entering these you will be able to browse the Web normally and have access to documents which were previously restricted.

In the future

EUCS is continually evaluating its proxy service, to see if it can be improved, and whether other proxy technologies could be provided. Examples might include SOCKS, RealMedia for streaming media content, and ftp proxies.

In the light of the proposed changes to the charging mechanism for use of SuperJANET, it is likely that the free cache service will no longer be 'free', as all bandwidth—whether or not it be via the JANET National Cache—will be charged for. In fact it is possible that traffic-based charging will be abandoned. In these circumstances it is likely that the free and charged cache clusters would be merged into one single cache cluster, and a new charging mechanism put in place.

Graeme Wood (EUCS)

JANET across the Atlantic

The UK academic network JANET has received two new 2.5Gbit/s connections to the American



Internet, connected to different points on the JANET backbone for maximum resilience. The UK now has around ten times as much transatlantic capacity as previously.

One side-effect of the new connections is that the old accounting system has been abandoned, and a new way is being devised to charge individual institutions for their network usage. UKERNA, who operate the network, have consulted widely on how best this should be done, and the University's C&IT Committee is currently considering various ways of paying Edinburgh's charges.

Scott Currie (EUCS)

Surfing Europe

According to research by IDC Publishers of the Netherlands, there were more Internet users in Western Europe than in the United States last year, for the first time ever, with nearly half of all Europeans going online in January this year. Europe has also taken over second place from Japan in the e-commerce league. Over the next few years European use of the Internet is expected to grow by 16% a year compared to 11% in the US, while worldwide online spending is expected to increase by almost 70%. There were almost 500 million Internet users in the world last year, and likely to be twice as many by 2006.

Further details are available via <http://www.europemedia.net/shownews.asp?ArticleID=7526>

Nick Stroud (EUCS)

Forged junk mail

Last month the University was the victim of a forged mail incident. Millions of junk mail messages, purporting to come from University addresses, were sent to users at thousands of systems across the Internet. This mail neither originated on, nor passed through, our systems, and the addresses it bore do not exist on our systems. The impact on our own mail service was nevertheless severe.

The volume of delivery errors overwhelmed our mail relays for some days. To take the load we deployed more powerful hardware, and used the existing hardware simply to keep internal mail functioning. This helped us to weather the storm, and we will make the arrangement permanent.

We are not alone in being victims of this sort of abuse. Other academic institutions have been similarly hit, and major service providers suffer this all the time. Unfortunately there is nothing we can do to prevent it, as the messages originate on networks outwith our control. Our security team has been working through the JANET authorities who coordinate such efforts on behalf of the UK academic community, and the police were informed.

Other major problems are the damage to the University's reputation, and the sheer volume of complaints received from the recipients of the junk mail who do not realise that mail addresses can be forged nor that the mail header shows where a message has really come from. If you receive such a complaint by email, please forward it to abuse@ed.ac.uk for handling.

Fuller information is available at <http://www.ucs.ed.ac.uk/usd/iss/ol/comms/spam.html>

Scott Larnach (EUCS)

Personal Web pages

For over five years EUCS has allowed users of the central Unix server (**holyrood**) to publish personal Web pages with addresses like <http://www.ed.ac.uk/~user/>

As announced in *BITs* last June and November, this service has been replaced by a new, dedicated, Web server. For a transitional period requests for old pages are being redirected to the new site, <http://homepages.ed.ac.uk/user/>

Most people had no difficulty with this change. Minor problems occurred for people who used CGI scripting or Server Side Includes which depended on the '**~user**' part of the old address, and who had not had a chance to test these in the advertised testing period.

If you have problems because of this change, please contact your EUCS support team for advice on modifying your pages or scripts.

Graham Rule (EUCS)

Distributed computing

Following the article in the December issue of *BITs* about global computing efforts, several people joined the University's team for the protein-folding project, with the result that the team has crossed the 250 work unit barrier and now lies in 180th place. Our overall contribution remains small, but every contribution is a positive one.

If you would like to add your computer's spare time to a distributed computing project, you can find details of several by looking up 'distributed computing' in EUCSinfo's A-Z index. Please note that you must not run such projects on computers which do not belong to you. Also, to save electricity, you should switch off your monitor if leaving your computer running overnight or at weekends.

Alistair Knock (Italian)

Enhanced Streaming Media service

Following a recent investment by EUCS, the Streaming Media Service now provides support for Microsoft Windows Media in addition to the established RealMedia service, to provide local content developers with unparalleled opportunities for creating attractive and compelling 'rich content' for online learning resources. Full details of the enhanced service are available at <http://webhelp.ucs.ed.ac.uk/services/media/>



The new service uses the load balancing features of Windows 2000 Advanced Server to cluster several smaller machines into a single 'virtual host'. Since this solution provides a cost-effective means of scaling the service as demand increases, Windows Media is now the preferred format for delivering streaming video and audio for research and learning within the University.

The RealMedia service remains for hosting content that needs to make use of its specific features, such as support for the W3C's SMIL 1.0 in RealPlayer and the ability to include several simultaneous audio encoding rates within a single stream. In addition, QuickTime content can be served by RealMedia until a dedicated QuickTime streaming service is provided.



Publishers and developers who want advice on using the service and on selecting the most appropriate media format(s) should contact stream-media@ed.ac.uk.

In addition to providing 'on demand' delivery of streaming media content, the streaming media service can, in association with technical services of MALTS, support the live broadcast—or 'webcast'—of content over the

Internet. During October 2001 the service provided a live webcast of the complete output from the local student radio station FreshAirFM in both hi- and lo-fi MP3 audio. The station will be back 'on air' in May.

In March and April the service will be webcasting the prestigious Enlightenment Lectures in RealAudio and in Windows Media. Further details of these lectures are available at <http://www.ed.ac.uk/events/lectures/enlightenment/>

To discuss webcasting of events contact stream-media@ed.ac.uk.

John Smith (EUCS)

Graphics & Multimedia in comfort

The Graphics & Multimedia Resource Centre at The King's Buildings was comprehensively refurbished in February. It is now open again in room 3901 of the James Clerk Maxwell Building, with more comfort, more facilities and more space. To make the extra space, we have opened a second room (JCMB 2901) and moved some of our more specialised equipment there: mainly audio and video systems. New facilities include:

- readers/writers for all formats of memory card/memory stick/microdrive as used in digital cameras, giving much simpler and faster transfer of images. The IBM Microdrive is also useful for bulk data transfer to and from laptops.
- support for CD-RW recording, and enhanced support for CD-R.
- real-time conversion of video into Real Video streaming format (complementing the existing real-time MPEG1 capture facility).
- a new host system for high-quality audio capture, editing and production, and for MIDI sequencing.

John Wexler (EUCS)

CD-RW: caution required

CD-RW (rewritable) is an economic medium for data storage, and the Graphics and Multimedia Resource Centre is happy to support it. However, it does have limitations. Before you start to use CD-RW, you should make sure that it will suit your needs.

In spite of general assurances from vendors, CD-RW disks cannot always transfer data between systems, and often cannot be used in older CD-R drives and CD players.

One source of problems is the difference between older CD-RW drives, recording at 1x to 4x speed, and newer high-speed drives which require media marked 'high speed'. Low-speed drives need low-speed disks: they will often reject high-speed media. Some suppliers have stopped offering low-speed media.

If you have a low-speed CD-RW drive, we suggest you stock up with usable media. If you are buying a system or a drive, do not accept a low-speed drive, no matter how cheap it is.

The low cost of CD-rewriters has encouraged people to use CD-RW for backing up or archiving important documents. Unfortunately CD-RW is *not* a reliable medium for this, and data corruption can and does occur. If you use CD media for backup and archiving data, the following steps will help lessen the risk of data loss:

1. Use write-once images and standard formats such as ISO9660.
2. Make more than one backup copy and store copies in separate locations.
3. Verify that your backups can be read before they are needed.

For more information see <http://www.ucs.ed.ac.uk/usd/scisup/faq/CD-backups.html>

James Jarvis, John Wexler (EUCS)

MapInfo site licence

EUCS now has a CHEST site licence for MapInfo Professional and MapBasic. Both products are for Windows only.

MapInfo is a complete desktop GIS (Geographic Information System), in the same category as Arcview, which is also available from EUCS under site licence. Some feel that MapInfo offers a more intuitive interface for novice users, but both offer very similar functionality.

GIS software enables you to create seamless coverages, choose your scale, separate map features into layers for further processing, perform geographic queries, add text and symbols and combine other geographically referenced data to create thematic maps. At the end you can print high-quality maps as big as your printer/plotter can handle. You can also export maps as image files in common formats.

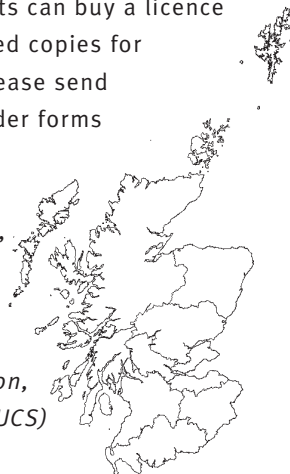
Users of EDINA Digimap, in addition to using the online mapping interface, can download Ordnance Survey map data files, convert them into a suitable format, and bring them into a GIS package for further manipulation.

The Web site of the Bodleian Library Map Room at Oxford provides online guides for using MapInfo: see <http://www.bodleian.ox.ac.uk/guides/maps/miguide.htm>

You can obtain single copies of one or both products for £80 p.a.. Departments can buy a licence for unlimited copies for £1,000. Please send internal order forms (GL220) to

EUCS
Purchasing,
JCMB, The
King's
Buildings.

Charlotte Moon,
Robin Rice (EUCS)



New Data Library holdings

The Data Library has obtained several new datasets for use in research, teaching and learning.

HESA (Higher Education Statistics Agency) datasets:

- **HE Finance Plus, 1999-2000** contains the full finance statistics returned to HESA from nearly all UK universities and colleges of higher education.
- **HE Planning Plus, 2001** contains data relating to students for the academic years 1999/2000 and 2000/2001; and academic staff, finance data and non-credit-bearing course data for the academic year 1999/2000.
- **Resources of Higher Education Institutions, 1999-2000** contains tabulations of income and expenditure, and characteristics of academic staff (including gender balance and ethnicity).

1881 Census for Scotland

This computerised transcription of the census enumerators' books consists of the name, address, relationship to head of household, marital status, age, gender, occupation and birthplace of individuals.

Scottish Church Attendance Survey

This dataset covers church type, attendance and congregation size between 1990 and 1994 for adults and children, age and gender.

Updates from the Data Archive:

- **British Election Panel Survey, 1997-2002 (Waves 1-5)**
- **British Household Panel Survey, 1991-2000 (Waves 1-9)**
- **Family Resources Survey 1999**
- **Quarterly Labour Force Survey (March-May 2001)**

The complete list of Data Library holdings may be viewed at <http://datalib.ed.ac.uk/holdings.html>

Stuart Macdonald (EUCS)

BCS meeting: Extreme Programming

Extreme Programming is a way of creating high-quality, adaptable software quickly, and is described as "rather fun". Brian Shearing, an independent consultant, will give a presentation on it at an open meeting at 6:30pm on 13th March at the Royal Pharmaceutical Society, 36 York Place. There is further information at <http://www.edinburgh.bcs.org/01-02/2002-03-13.htm>

David Muxworthy (EUCS)

Good Friday holiday

The University is closed for the Good Friday holiday on 29th March, so no EUCS staff will be working on that day, and computing and network services will run unattended. The Easter vacation is from 16th March to 15th April inclusive, during which time the open-access computing labs located in libraries will only be open from 9am to 5pm (to 9pm on Wednesdays in the Main Library). The KB Centre and Greenfield Suite computing labs will be accessible 24 hours a day to those with entry cards.

David Muxworthy (EUCS)

Google competition

Google, the provider of one of the world's leading Web-searching services, has announced its first annual programming contest, and is inviting people to write a C++ or Java program to "do something interesting" with 900,000 Web pages it has indexed. The prize is \$10,000 in cash, a V.I.P. tour of Google HQ, and perhaps a chance to run your program on Google's multi-billion document repository. The details are at <http://www.google.com/programming-contest/>

Nick Stroud (EUCS)

The science journals crisis

Impact on University research and scholarly communication

Journal prices continue to rise dramatically, with commercial publishers expanding their market control through acquisitions, mergers and the purchase of titles from learned societies. Library budgets can no longer keep pace with the rapid rise in journal subscriptions. The promise of the digital revolution to decrease costs and increase access has been threatened by publishers who are intent on maximizing revenues by raising prices and restricting use.

Attempts to transform the present system are now being made and involvement by the academic community is critical in this process.

There will be a meeting to discuss these issues on **Monday 4th March**, at 2–4pm, in Lecture Theatre A of the JCM Building, at The King's Buildings, chaired by Dr Simon van Heyningen.

In the first part of the meeting, Julia Blixrud (of the Scholarly Publishing & Academic Resources Coalition, SPARC) will speak about the changes sweeping through the scholarly communication process; the role which SPARC is now playing in creating new lower-cost, high quality journal titles; new publishing models and initiatives; and other associated issues. You can find out more about SPARC at <http://www.arl.org/sparc/>

There will then be presentations from Dr Maurice Gallagher (ICMB) Prof Larry Hurtado (Divinity), John MacColl (EUL), and Ian Mowat (University Librarian), followed by questions and answers.

For further information contact Richard Battersby (tel 505204, email Richard.Battersby@ed.ac.uk).

Richard Battersby (EUL)

Learning and Resource Centre

The Learning and Resource Centre—LRC—is a collaborative venture between Computing Services and The Library. Its aim is to enable staff and students to become independent learners by providing a range of electronic resources and related support.

The LRC brings together many resources and services to enable staff and students to develop their skills in working independently with computers and information, and to explore new computing possibilities.

The LRC has resources for multimedia, self-paced learning (on how to search for information effectively from bibliographic databases or the Internet, and beginners' materials for basic IT skills), student support, and special needs. Certain Data Library resources such as country-level economic data and financial data are accessible only in the LRC.

Learning materials include all the publications and course workbooks produced by EUCS, computer-based learning packages, videos, books, documents and leaflets.

For example, you can learn how to use Microsoft Office and other applications, how to program or write HTML, about personnel issues such as appraisal interviewing, delegation and recruitment interviewing. Assistance is available from the Helpdesk, which provides integrated support from Library and Computing personnel.

The LRC is a focal point for multimedia support in the central area, with a range of scanners, digital cameras, colour printers, Windows and Macintosh computers, and software.

The LRC is expanding its bank of equipment for users with

disabilities, adding to such existing facilities as Braille printing, synthesised speech output, speech recognition systems, screen magnification facilities, screening software for indicators of dyslexia, and supportive writing software such as spell-check programs. These may be used for demonstration and assessment, or for study.

You are cordially invited to use the LRC's facilities to help with your learning, research or teaching. The only preparation you need is to make sure you know your password (as used in the open-access labs); If you don't know it, follow the instructions about 'How to get your login details' at <http://www.ucs.ed.ac.uk/fmd/mft/accounts.html>

You can find out about the LRC at <http://www.asg.ed.ac.uk/lrc/>
Allyson Hayes (EUCS/EUL)

Edinburgh BITS

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Contributions to *BITS* are welcomed from all readers.

Copy deadline for April BITS:

Friday 15th March