Gone troppo

More than 250 AUC staff members, students and academics have converged on Townsville's James Cook University for the latest AUC Academic & Developers Conference. With heated debate and hotter weather guaranteed, this northernmost-ever ADC is shaping up to be the best yet.

The AUC's OS X training coup

Nearly 100 IT managers and other Mac fans from AUC member universities have become the first people outside of the United States given the chance to take Apple's new Mac OS X Administration Basics course. The response was overwhelming and uniformly positive, and the AUC is already considering what to do as an encore.

From Pollachi to Perth

A year ago, southern India's Dr Mahalingam College of Engineering and Technology signed on as the AUC's first Associate Member outside of Australasia. In the middle of this year, a dozen of the school's finest students made the trek to Perth to begin a three-year academic odyssey that's cemented the AUC's warm relationship with our Indian neighbours.

U of Q students serve up a virtual cuppa

This November, the University of Queensland will graduate its first set of students to have successfully completed its new Bachelor of Information Environments degree. Its holistic approach offers a different perspective on human-technology interaction, and positive student reaction – as well as exploding enrolments – confirm this Mac-powered course has a long future in Ipswich.

PRODUCT
Round UP

BREAK THE USB SPEED BARRIER

The new USB 2.0 connectivity standard is designed to bring USB's performance more in line with that of Apple's own FireWire standard. USB 2.0, however, is backwards compatible with earlier USB 1.1-era devices, which provides a seamless upgrade path for owners of USB-enabled keyboards, mice, external drives, digital cameras, and so on. USB's transfer speed of 480MB/sec makes it more than adequate for digital video cameras and other high-speed devices that may support the standard in future.

Adaptec's USB2connect 5100 is a PCI adapter offering one internal and five external USB 2.0 ports. It includes a 3m connecting cable and works with MacOS 9.0.4 or later.

Contact Adaptec Australia on (02) 9416 0687 or see www.adaptec.com.

RICOH'S PORTABLE MULTIMEDIA CENTRE

What with mobile phones that store addresses and DVD players that read MP3 disks, convergence is truly upon us. We couldn't, therefore, help but mention the latest efforts of under-rated imaging contender Ricoh, whose small Caplio RR10 combines an MP3 player with a 2.1 megapixel digital camera – complete with the usual 2x optical (38-76mm equivalent) and 2x digital zoom, resolutions of up to 1600 x 1200, video capturing capabilities, macro mode, TV out, voice memo recording and black-and-white mode for capturing text documents.

A tiny LCD screen lets you review images and choose from loaded MP3s, and stamp-sized SD Memory cards store your data. You recharge and synchronise the RR10 with your PC or Mac (OS X it not yet supported, unfortunately) simply by slotting it into its cradle, whereupon all your new images and videos are sent to the system and MP3s synchronised. During the batch transfer, images are automatically numbered and can be converted to a set resolution at the same time.

This makes it a foolproof solution for the itinerant student or researcher, and when we say it's small we mean tiny – just 11.6 cm long and 5.4 cm wide. That's smaller than your average microcassette recorder, and the whole thing weighs under 200 grams. The Caplio retails for $1399 and retails for $1299.

Contact Ricoh on 1300 363 741 or www.ricoh.com.au

INFRARED ON A STICK

Infrared remote controls are so ubiquitous in the world of audio-video equipment, it's a wonder nobody thought of this one sooner. The USB zephIR is a small, pole-mounted infrared transmitter that hooks up to your Mac using standard ADB or USB ports. Using software to control its transmission, the zephIR is marketed as a fun Mac add-on for home users - but anybody involved in research technology will recognise the possibility of using zephIR as a versatile equipment controlling mechanism.

The programmable device works at 33, 36, 38, 40, and 56 KHz. It can be completely controlled using published programming interfaces, can be managed over networks using AppleScript, and can learn infrared control commands from other devices.

Visit www.thezephir.com, where you can learn about and order the device. The zephIR is available in an ADB version for US$49.95 (approx $A96) or USB version for US$64.95 (approx A$125).

OFFICE GETS A FACELIFT

By the time you read this, Microsoft will be just about ready to ship the long-awaited Office 10 for Mac OS X, a major overhaul of the venerable productivity suite that imbues its four core applications - Word, Excel, PowerPoint and Entourage — with all the niceties of the new Aqua user interface.

New Office 10 features include a Clear Formatting feature to fix up misformatted documents; Auto-Recover, to save documents at regular intervals; PowerPoint packages that allow for easier distribution of presentations; and an anti-aliased look and feel throughout. Integration with the Quartz graphics layer provides sharper, cleaner clipart, and early reviews have lauded what appears to be a dramatically improved package throughout.

Contact Microsoft Australia on 132 049 or see www.microsoft.com/mac/products/office/10.

MULTI-LINGUAL STORAGE TO GO

FireWire might be faster than USB for connecting devices, but if there's no FireWire port handy it won't help you very much. Interactive Media Corp. has taken a multipartite approach to mass storage by giving its Kanguru range of portable hard drives connectors for FireWire, Cardbus, PCMCIA, USB, and Parallel ports.

Available in five capacities ranging from 30.7GB to 100GB, the drives' universal connectivity will ensure that you can take your files on the road or between offices and always be able to access them from either Windows or Mac systems. They offer seek times of 9.5 milliseconds and data throughput varies - depending on the connector used - from 20 MB/min for parallel to more than 250MB/min over FireWire.

For more information, see www.interactivemediacorp.com/35portable.html. IMC only accepts direct wire transfers from international customers, so you'd be best to buy through credit card-accepting resellers like CDW.com, MicroWarehouse.com or OutPost.com. Discount prices at CDW range from US$207.23 (A$398) for the 30.7GB version to US$537.01 (A$1031) for the 100GB model.

VIDEO CAPTURE IN A FLASH

Video capture cards no more. If you need an easy way to capture and work with video on your Mac, consider ADS Technologies' USB Instant Video and Instant DVD.

Designed to provide simple capturing of video, the $251.90 USB Instant Video features video and S-Video input ports as well as MovieWorks LE and Oculus 3.0 software for recording standard VCDs and manipulating the video. Audio must be captured separately through your computer's audio-in ports, then mixed together in software. With a standard USB port providing easy connectivity to both PC and Mac, this is an easy way to get all sorts of video into your computer.

Instant DVD is an all-in-one solution featuring a breakout box with RCA video and stereo audio plugs. The included software automatically converts video to MPEG-1, MPEG-2 or high-resolution SVCD formats and automatically burns the movies in playable format onto CD-R or DVD-R disks. Instant DVD will ship shortly for around $600.

Contact Conexus on (02) 9975 2799. For more information, see www.adstech.com.

editorial

FROM THE EDITOR'S DESKTOP

Greetings and welcome to another issue of *Wheels for the Mind*. It's time again for the AUC's Academic & Developers Conference, this time to be held on the campus of tropical James Cook University in sunny Townsville, Queensland. Many of you will be reading this issue for the first time at the conference, so thank you for making the trek up north to join us.

As always, this issue of *Wheels* is full of the latest information about the AUC and how our members are using Apple technology to great effect. As you'll see after turning the page, the latest round of seeding grants shows strong promise, with many of the projects aiming to improve the interaction between project team members in both real and virtual environments.

We've also highlighted the reactions of many attendees to the AUC's recent OS X Administration Basics course, which was offered in July through an AUC subsidy program and was the first time the Apple-delivered course had been offered outside of the US. The strong feedback was extremely encouraging, and rest assured we'll be investigating worthy successors to the course for possible delivery next year.

Also in this issue, we've got the rundown on how Apple technology has helped Edith Cowan University (ECU) and the University of Queensland build and deliver completely new academic courses of study. Andrew Jeffrey offers a rundown of

Apple's new DVD Studio DVD authoring software, and later on in the magazine we highlight Perth's Curtin University - a long-time member of the AUC that has recently restored its commitment to the Mac platform after a short cultural change at the top.

Regular readers of *Wheels* will remember our coverage, in the Spring 2000 issue, of the AUC's blossoming relationship with southern India's Dr Mahalingam College of Engineering and Technology. I'm pleased to report that relationship has borne fruit this year, with the first round of Dr Mahalingam student engineers successfully undergoing their first of three eight-week courses at ECU. We look forward to many more such exchanges as the AUC continues to expand its reach.

As always, *Wheels* is now available as a downloadable .PDF file through the AUC Web site (http://auc.uow.edu.au), where you can also go to sign up for a free subscription and to keep up to date with the latest happenings in the AUC.

Until the next issue, I wish you well.

Peter Sharpe
Editor
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AUC MEMBER UNIVERSITIES

AUSTRALIA

Australian National University
Central Queensland University
Charles Sturt University
Curtin University
Deakin University
Edith Cowan University
Flinders University of SA
Griffith University
James Cook University
La Trobe University

Macquarie University
Monash University
Murdoch University
RMIT University
Southern Cross University
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University of Western Sydney
University of Wollongong
Victoria University of Technology

NEW ZEALAND

University of Auckland
University of Canterbury
Massey University
University of Otago
Victoria University of Wellington
Waikato University

AFFILIATED UNIVERSITIES

Australian Defence Force Academy
University of Canberra
Dr Mahalingam College of Engineering
   & Technology, Pollachi, India

AUC sows latest crop of
seeding grants

In July, the AUC announced the recipients of the latest round of Apple University Development Fund (AUDF) Seeding Grants. Designed to help spur innovative development projects among the students and staff of AUC member universities, the annual grants fund projects that are likely to return substantive benefits to AUC members and the Macintosh community in general.

This year, the AUC received 35 applications from AUC Member universities. A panel comprising representatives from academia, the AUC and Apple Australia reviewed all of the applications, narrowing them down to eight winners in total. Each winner receives a loan iMac for 12 months; an Apple Developer Connection student membership; Learning Cocoa by O'Reilly Publishers; Mac OS X, including the Developer Tools CD; CodeWarrior software, courtesy of Code & Data Pty Ltd; and J-Builder software, courtesy of Borland.

And now, the envelope, please. This year's winners were:

Steven Goodwin, Griffith University

Goodwin plans to develop a simulation environment that will allow creation of intelligent agents, which venture into the virtual world and use a variety of sensors and basic logic to draw conclusions about the environment they're placed into. They can also be programmed to react to certain events in a certain way, can make decisions based on their experiences, and can be subjected to user-defined physics and collision rules. Since the agents can be programmed independently, they'll allow users to model complex environments in which the autonomous agents react differently based on their individual characteristics.

Jason Thorne, Charles Sturt University

A lecturer in computer science at Charles Sturt University, Thorne wants to give computers the ability to understand the video streams they're receiving. He's currently developing some complex mathematical algorithms that will allow the system to pick out individual elements from a video feed in real time. This could dramatically improve user interfaces, since a computer that could sense the mood and position of the user could automatically adapt the onscreen information accordingly.

"If the computer can understand what you are and knows an elephant from a teacup, that's computer vision," Thorne explains. "I'm trying to work out a way of simplifying this, using pure mathematics techniques for resolving the dimensionality of data. This would allow compressing of the data, and a function at the other end would interpret that data and turn it into an image. It's all about artificial intelligence and understanding what the computer is seeing."

The technology would have many applications, from interactive gaming to jazzing up conventional chat programs. During a chat, for example, the program could analyse data from a standard videoconferencing camera that infers the user's emotional state based on visual cues. This inference could easily be translated into software, allowing virtual 'avatars' to smile at other users when the monitored user smiles. The technology could also pull actors from a video feed and superimpose them on computer-generated backdrops, and it could also improve video transfer efficiency by sending only the data that changes between frames.

Uwe Rosebrock, University of Tasmania

Aiming to improve the capture of knowledge within organisations, Rosebrock will implement a knowledge maintenance methodology called Multiple Classification Ripple Down Rules (MCRDR). When applied to the expanding knowledge stores common within virtually every organisation these days, MCRDR can improve the classification of virtually any type of information. Rosebrock will use her AUDF grant to develop a working MCRDR engine under Mac OS X, and will also develop a library of MCRDR rules intended to make the system applicable to a variety of real-world environments.

Kane Pittard, Edith Cowan University

Pittard is taking on the not inconsiderable challenge of building a complete project management environment for Macintosh systems. Aimed at small teams of one to ten participants, his software will be modular, with a core project management and presentation system augmented with additional modules for features such as Gantt charts, status reports, instant messaging, dynamic costs monitoring and so on.

"There's nothing in this realm for Apple computers," says Pittard, a part-time systems administrator with ECU who's in his second year in the uni's B Engineering (Computer Systems) degree and previously did a Post-Graduate Diploma in Interactive Multimedia. "The last thing was Microsoft Project, and that got canned years ago. But it's a very important business tool, and there's nothing that developers can use within unis."

Pittard plans to build the project in Objective C or Cocoa, and hopes to have a beta version completed by mid 2002. He

ultimately hopes to market it commercially, with AUC members naturally attracting favourable terms.

Lachlan Pearce, University of Queensland

Collaboration is also a focus of Pearce's work, which will culminate in the development of a graphical tool that facilitates communication between users interacting within a real-world spatial metaphor. The system, which Pearce expects to build using Java 2 in order to make it cross-platform, will represent users within 2D or 3D room models using graphical avatars, multi-user tools, and virtual whiteboards for file and information sharing.

Penny Wyatt, University of Technology, Sydney

Ray tracing software - which produces photo-realistic images by calculating the paths of multiple light rays bouncing off of three-dimensional objects – is indispensable for three-dimensional graphics design. But many ray tracers run into problems when the sum of lights is too high a value to be represented within conventional palettes; the usual result is to simply clip any value that exceeds the threshold, which creates bright areas of lost detail in the final image.

"It's been a common problem since television first came in," says Wyatt, a B CompSci student who sees the skills she'll gain as a strong benefit for her planned career as a programmer. "If you're just adding up all the lights that affect any single object, the ray tracer will produce a picture with an arbitrary range of colour values. When you're modelling a real-life system and you just cap off the values, you'll end up with bright things being washed out. I just love programming, and I'm looking forward to getting the hang of programming graphics, Java and OS X."

Wyatt's project will produce a tone mapping application that lets designers test ray-traced images using a broad range of colour schemas. By adjusting the range of colours used, her application will let users recover the detail lost in overexposed sections of the picture, and in so doing produce a more effective overall image.

Malcolm Smith, University of Melbourne

Smith plans to build a virtual, encrypted file system that will allow the creation of restricted-access storage areas within Mac OS X. Those areas will be represented on the desktop using a standard icon, onto which any type of file can be dragged and dropped. Data will be seamlessly encrypted, with access regulated by secure hardware tokens such as the KeyChain: users will have to insert their unique identification key into a free USB slot before they can access the data.

Michael Reeves, University of Queensland

Better organisation is the name of the game for Reeves, who is planning to build a scheduling and project management tool that will tightly integrate the two functions, which are generally addressed by separate programs. Users will not only be able to set the usual assortment of events and tasks, but will also be able to have the program automatically allocate time to ongoing projects with start and finish times that can't be measured in terms of a few minutes or hours. By combining projects with incidental appointments, Reeves' program will allow users to get a complete picture of their time schedule that allocates time to both short-term and long-term projects.

AUDF In Action: Pay-as-you-go streaming media

As soon as Charles Sturt University student Rhys Griffith saw streaming video in action, he wanted a piece of the market. Realising that it would be impossible to compete with Microsoft, Apple and RealNetworks on a technology basis, he instead focused on finding a niche where he could add value to their products. He found that niche after a bit of brainstorming, and thanks to an AUDF Seeding Grant he received in 2000 he's well on the way to turning it into reality.

Griffith's project involves building a metering system for streaming media, which will allow Web surfers to pay content providers by the megabyte. This is a significant break from conventional charging models, in which users typically pay a flat monthly fee or per-view fee to watch an entire piece of media.

While effective, that approach may make many users reticent to pay money for a product of unknown quality. When they're being charged by the megabyte, however, customers can stop a download in midstream if they get bored of the movie - and only end up paying for the portion they've already watched.

This simple example illustrates the power of Griffith's solution, which he hopes to market to Internet service providers, streaming media specialists, niche-market content providers and anyone else streaming QuickTime video over the Web.

Enamoured with OS X and its Project Builder and Interface Builder environments, Griffith (currently pursuing a B Arts [Communications] and B CompSci) has already built a small-scale version of the system and plans to complete a version with a more user-friendly interface before the end of this year. The system will eventually run as a plug-in for both the QuickTime viewer and the QuickTime Streaming Server.

"When bandwidth gets to be high enough to support it, people can watch movies, listen to the radio, and have all their entertainment from the home," Griffith says. "I've done a lot of research for this, because you have to go into what the user wants and make it as simple as possible for them. I've put a lot of thought into how people would pay: it would be a subscription site where they would go and subscribe to join, then use their user ID and password to pay per view. I wanted to make something really good and interesting for the IT industry."

AUC-funded OS X training in
strong demand

By David Braue

Apple's OS X Administration Basics course was a runaway success with AUC members

Mac OS X has been extremely well received by an eager audience among Australia's universities. Yet while those using the new operating system have universally lauded its improved capabilities and reliability, most concede that it introduces something of a learning curve for users accustomed to working under MacOS 9 or earlier versions.

To this end, Apple has been working to introduce training courses to ease the transition to the new environment. This past July, AUC members were lucky enough to be the first ones in Australia to attend Apple's new Mac OS X Administration Basics course, which had never been taught outside of the United States before.

The course was held during July using facilities donated by the University of New South Wales, University of Queensland, RMIT University and Edith Cowan University, and in late September at the University of Adelaide. All told, over 90 people attended, with demand for several sessions so strong that the 15-person limit was extended.

AUC subsidies helped most of its 31 member universities send representatives to the $1695 courses, with each university allowed to send two people for $300 and additional people permitted to attend at $950 each. So that universities in regional areas would be equally represented, the AUC also picked up the cost of transportation and accommodation to get their representatives to the nearest capital city.

The three-day course is fully accredited by Apple and is one of two courses making up the Apple Certified Technical Co-Ordinator (ACTC) certification. Its focus includes both practical issues and technical details related to the new operating system, with covered topics including configuration, testing and troubleshooting; managing multiple users, preferences, applications, files and privileges, printing, e-mail, Internet and Web access, and peripheral device support.

The course also includes an architectural overview of Mac OS X, a tour of the operating system, comparisons with previous versions, a number of hands-on exercises to highlight the benefits of the new environment.

Universally strong response to this course offer confirms the high level of interest both in the AUC and in OS X, according to Andrew Jeffrey, programs manager with the AUC. OS X-related training has been a natural focus this year, but future courses will be determined in 2002 and beyond based on demand at that time. Last year's training revolved around configuration and other issues faced by people administering Macintosh systems from an end-user point of view.

Mac OS X Administration Basics was primarily attended by IT support staff, but there were also a number of highly technical users who wanted to get their hands dirty with the new operating environment. It's the second in what Andrew Jeffrey expects will become an ongoing series of training, with OS X-related training a natural focus given its relatively recent release.

"We were swamped with demand, and all the courses were full and overfull in some cases," he says. "Some universities have even contacted Apple to run additional training on campus themselves. Training is an important part of the AUC's activities, and feedback from people has been excellent. It has been very popular, members support it, and it's seen as a very high-value benefit of being a member of the AUC. We'd also like to thank those universities and staff for allowing us to use their labs on behalf of the AUC and other members; this meant we could do the training and keep the costs as low as possible."

For more information on the Mac OS X Administration Basics course, see: http://www.asia.apple.com/iservices/technicaltraining/macosxadminbasics.html.

> "I feel much more confident and comfortable using OS X now that I've completed this course."
> Anonymous course evaluation form

Technical staff made up the bulk of the attendees at the Mac OS X Administration Basics course, with all eager to find out how the new operating system would fit into their existing operating environments. Here's what a few of the attendees had to say about their experience:

Ashley Scott, computing consultant, Information Technology Services, University of Sydney

What do you do: I do desktop support at Sydney University. I'm a Mac programmer and have been using them for audio production for many years.

How are you using OS X: I've been a Linux user for many years and know what it can do on limited hardware. I'd been using OS X for a little while in my last job, and it looked like a good chance to get a formal introduction to it.

What did you think of the course: It went very well; it was a very good step-by-step introduction. There were a whole lot of things I rushed ahead and missed in my previous use of OS X, and it was good to get step-by-step coverage of those kinds of things. It was quite good coverage of the desktop platform, as opposed to the server.

Kristian Walker, technical officer, Central Queensland University

What do you do: I'm responsible for budgeting, purchasing, maintaining and repairing all the systems in the Faculty of Education and Creative Arts, including about 170 Macintosh systems.

How are you using OS X: I like OS X, but I've been working with computers for 12 years now; a lot of people here still have problems finding their attachments folder. The things OS X does are really useful - protected memory, for example - but I think OS 9 is easier to pick up for a newbie.

What did you think of the course: The main reason I was keen to go to the training was because I'd only been running the OS X beta and didn't have a final version of it. I just don't have time to sit down and play with things, so the course was a good way of spending three intensive days with no distractions - and getting stuck into the nitty gritty of it.

I definitely found it worthwhile - the first two days were pretty cool, although my only complaint was that the last day it wasn't going fast enough. They were catering for a lot of PC people who hadn't used a Mac before, and once they got into the reasonably involved, how-do-you-fix-it-if-something-goes-wrong, it stayed on the basic level. However, it was a good way of finding all the ins and outs of OS X intensively without trying.

Jason Dean, information technology officer, University of Tasmania

What do you do: I administer around 40 predominantly Macintosh machines within the School of Management.

How are you using OS X: I had dabbled a bit in OS X, but the biggest benefit I took from the course was the confidence to use it as my main operating system. I'm also looking to do a demonstration and presentation to the other staff members; I'm looking for a small group to change over to OS X, and evaluate it from there.

What did you think of the course: I think it was fantastic. It covered a lot of the grey areas I hadn't been able to uncover myself. The quality of presentation, and of discussions with other users from other unis, was great. It gave us an opportunity to compare notes with where we were at, and what problems we'd had. For example, I'd had problems printing under OS X and so had others in the course. In one of the quieter times we were able to address that as a group.

Chris Lang, support services officer, Victoria University

What do you do: I'm with the IT department, and handle pretty much all the Mac support on the St Albans campus, where we run most computer-mediated art and multimedia design.

How are you using OS X: I was using it pretty much from the release of the final copy. We've got a lot of staff and faculties wanting to move to OS X, so the course was an opportunity for us to get better knowledge and plan the migration.

What did you think of the course: It taught a lot of extras, administrative types of tasks, tips and tricks I wasn't aware of. The content flowed, and it was done well. It gave us better insight into how the underlying core of the OS actually deals with the apps, files, and other bits and pieces. But it opened up more questions than it offered answers regarding migration: how we're going to have users validating to machines, how we're going to get a server to house all that information, and so on.

The training options opened up to us by the AUC are one of the big benefits of AUC membership. It opens us up for a lot of meet and greet, and I've met people I would probably never have dealt with if it weren't for the AUC.

Frank Salleo, technical supervisor, Murdoch University

What do you do: I run a small 16-system Mac lab in the School of Environmental Science, and support all the staff computers as well.

How are you using OS X: We've got two servers on OS X and there are two or three people running it on their laptops or desktops.

What did you think of the course: I thought it was very useful. I learned a lot of the differences between OS 9 and OS X, and it helped me a lot. I think everybody at the course was a bit more Unix aware, and everyone would have liked to see more time spend on the command line. If you're focusing more on users I don't think they would want that. But I knew the Unix things anyway, and tried them to make sure they worked. I'm really keen to do OS X Server training too.

Murdoch University's Frank Salleo

ECU's multimedia house of dreams

By David Braue

Few university workers ever get the chance to plan, build and manage a complete restructuring of several university departments. But that's exactly what several groups of Edith Cowan University (ECU) academics have been doing as they consolidate eight previously separate courses of study into a structured new multi-disciplinary program built around a raft of Apple technologies.

The change began in 1999, when the ECU executive decided it would be better to consolidate a number of related disciplines that had previously fallen into uncomfortable niches within a variety of different schools. Aiming to create a completely new program that would position ECU at the forefront of communications schools, the university combined individual programs in advertising, public relations, film and video, photo media, media studies, mass communications, multimedia, and journalism.

Power aplenty as ECU students search online using G4s

All address different aspects of the process of mass communications, and taken together now constitute ECU's new School of Communications and Multimedia (SC+M). SC+M's first new degree was the Bachelor of Communications, which took in its first students at the beginning of the 2000 academic year.

There are now approximately 1200 students in the undergraduate program, making ECU's communications school the largest in Australia. In 2002, SC+M will also introduce a Master of Professional Communication degree designed for graduates and those working in the field already.

While the eight core disciplines had previously been handled in various aspects of the liberal arts education, the Internet revolution has united them in practice by giving them all the power of global immediacy. To this end, the provision of appropriate digital technology has been a major cornerstone of the new structure, with a heavy bias towards Macintosh systems: there are over 200 iMacs alone, spread across five computer labs.

A further two labs hold a dozen Macintosh G4s, which provide extra grunt for applications such as digital photography and digital video (using Apple's iMovie and other tools). There are also labs dedicated for Internet-based research, sessional staff members and special projects. The school also has an industry-standard digital editing suite and facilities for production of QuickTime VR and streaming video, among other capabilities. SC+M has also taken the Macintosh to heart: a Filemaker Pro-based system enables online delivery of course content, and every course is now designed with an online element as appropriate.

"We've put together what we think are related programs," says Ron Oliver, professor of interactive multimedia at ECU. "Our communications curriculum has always been very Mac-oriented; we get students a very good grounding in the use of technology, and run the whole program using Macintosh technologies."

"A lot of lecturers are doing innovative and advanced things with online deliver in advanced programs. As well as having a strong technology base in the degree, students are exposed to rather innovative online learning modes and technology-based support for their online learning programs. The Macintosh environment provides scope for innovation and novel applications."

Because it was effectively starting from scratch, SC+M was able to install quite a lot of cutting-edge gear designed to make it a shining example of mass technology management. Designed eighteen months ago with an eye towards modern conveniences, the eight computer labs inhabit an old campus building that was completely refurbished to support the reborn communications program.

To speed the habitation of the new building, ECU IT manager Steven Doyle's team initially plugged a single Apple AirPort wireless LAN base station into the one available network slot, providing instant network access from anywhere in the building. Although conventional fixed networking cable now links systems throughout the site, the AirPort-based wireless connectivity remains, and dozens of students now regularly float in and out of the facility without ever plugging a network cable into their laptops.

Aiming to reduce the university's administrative burden, IT administrators have built the facility with strong authentication in mind. The labs are a beta site for the new MacManager 2 desktop administration system, and by early 2002 this will be integrated with Banque-tec smartcard readers built into every system.

Students will access the computer laboratory systems by inserting their student IDs into the smartcard readers and typing a password; these will be compared with entries in an LDAP (Lightweight Directory Access Protocol) directory service, built using the open-source OpenLDAP (www.openldap.org) specification, that maintains details of all enrolled students.

Because it knows what courses they're enrolled in, the directory will work with MacManager 2 to present a customised desktop showing relevant news and information for every individual student. It will also eventually link in with ECU's overall Microsoft Active Directory student database, once that's up and running.

As well as providing smartcard readers for student access, the labs' OS X servers will also be secured using Banque-tec smartcard readers that also offer biometric security through a built-in fingerprint scanner. Both style of readers are being tied in with the school's back-end systems using a bit of in-house Java coding.

The setup is so novel that SC+M had the honour of being selected as the first non-Sydney host site for the recent Apple-sponsored ITSC (Inte-grating Technology in Schools Conference), which saw over 120 teachers converge on the site to learn more about the use of technology in educational settings.

Ron Oliver

"We had a reasonably good budget and an old building to work with, and we completely redesigned the infrastructure," says Doyle. "It's the university's showpiece in terms of multimedia. The precinct is completely wireless, and we strongly encourage people to use wireless technology to do everything they want to do even out in the sun."

For more information about SC+M, visit www.scam.ecu.edu.au.

A new take on tech

Traditional computer science degrees focus on conventional programming skills, while graphics design courses often focus on artistic ingenuity but lack a larger context. In November, the University of Queensland will graduate its first-ever class of students who pursued the new Bachelor of Information Environments (BInfEnv) degree seeking to find a common ground that lies somewhere between those two extremes.

First offered during the 1999 school year, positive response to the BInfEnv has seen its popularity grow dramatically over the years. The initial class of 15 students, who graduate in November, grew in the second year to number 50. This year, 80 new students began pursuing the program, which takes a step back from programming and instead focuses on engineering more effective solutions to the challenge of building useful interfaces between man and machine.

Examining system usability is a key focus for the group, who undertake a combination of Java programming courses and more far-reaching courses such as mathematics, visual thinking, network design, algorithms, information visualisation and more. In their final semester, students undertake a major project that applies their learning so far to a real-world problem.

Kelly Hollingsworth

"We've been doing a lot of user-based stuff such as viewing products and designing them from the user point of view," says Kelly Hollingsworth, a third-year BInfEnv student who's designing a comparison shopping device for busy mothers for her final project. "Being the first group through, we got thrown in the deep and did have to learn a lot of things by ourselves, but that has helped us. I'm quite interested in the multimedia side, and product design is also interesting for me; I'm not really a code monkey."

The course is unique in Australia and one of only a few in the world built along similar lines, says Michael Docherty, the program's director and a lecturer within the University of Queensland's Department of Computer Science and Electrical Engineering.

"If you look at a spectrum of design professionals, you'll see that things are shifting to the digital world," he says. "Information Environments is this space between the physical and the digital. We encourage students to explore the brief and assess the problem before they go off into some solution process. The studio process is an iterative process whereby the problem and solution are revisited."

Throughout the course, students also remain involved in regular studio projects — hands-on work analysing and fixing usability issues with a range of equipment and concepts. Supporting this work is a high-powered lab of 19 Macintosh G4 systems with 21" monitors, large-format colour plotter, six flatbed scanners, large-format graphic tablets, a phaser colour printer, and data projector.

Such tools are proving to be a strong arsenal for Jamie Madden, a third-year BInfEnv student who's mostly likely the only undergraduate in Australia to have a real bank automated teller machine (ATM) in his dormitory. Access to the machine in question, which has been loaned to him (without money) by Bendigo Bank, is helping Madden to analyse one of the most commonly used human interfaces - then design a replacement prototype using

Information Environments emphasises thinking through problems instead of coding around them.

Macromedia Director, and possibly Java in the future.

"ATMs bug me because the interaction between user and system is so bad," Madden explains. "For example, they have a heap of options that don't need to be there. And some ATMs talk to you, but I'd like to make it possible for the person to specify whether the ATM talks or not. There's a gap between coders and designers, who design a lot of things that aren't implementable. We bridge the gap by knowing what those technical limitations are, and designing to those limitations."

The BInfEnv has been appealing to mature-age students as well as undergraduates. "I've learnt that it's really important to use the user-centred approach rather than the technology-based approach," says Roslyn Cooper, a nurse with 12 years' experience who undertook the program to get a better grip on the explosion of technology in her hospital workplace. "I mainly did midwifery or childminding, and saw so much technology coming into my work environment and knew nothing about it. People were really hesitant to use the technology, and I kept thinking 'there has to be a better way for this technology to be integrated into the hospital environment'."

For more information, visit www.infenv.csee.uq.edu.au.

Second-year Information Environments students built a virtual café called studio4 that uses sensors, interactive whiteboards, and other adaptive technology to simulate a real café. Chairs remember how long they've been sat upon, lights are turned on and off to follow patrons as they walk, and orders are placed on handheld wireless tablets.

Getting versatile with DVD Studio

By Andrew Jeffrey

Since their release, DVDs (Digital Versatile Discs) have been a strictly look-but-don't-touch affair. They were manufactured in high-security facilities, sold within tightly controlled distribution regions, and encrypted to make sure viewers didn't do anything untowards with their content.

After years of exclusivity, however, all that is about to change as DVD authoring finally comes to the masses, courtesy of Apple's SuperDrive — a Pioneer-built CD reader and writer that can also write to DVD-R discs. Offering 4.7GB of data storage and compatibility with conventional DVD players, the SuperDrive is Apple's way of delivering inexpensive, desktop DVD video authoring.

At the same time, Apple released iDVD — a consumer-friendly, drag-and-drop DVD authoring package — and DVD Studio Pro, a high-end, professional DVD authoring tool aimed at corporate, industrial, and professional users. iDVD was reviewed in the Winter 2001 issue of *Wheels for the Mind.*

DVD Studio Pro was originally being developed by Astarte until Apple purchased it and reworked the package, giving it a flashier interface and tighter integration with Final Cut Pro, and a free software MPEG encoder. Easy to learn and flexible to use, DVD Studio Pro fulfills Apple's promise of affordable DVD authoring. However, authoring a smooth-playing DVD requires a good amount of study, fine-tuning and planning.

Compressing your video

DVD Studio Pro is strictly for creating DVD Video discs — the same type of discs you buy at most department stores. The DVD Video specification (available at http://www.cselt.it/mpeg/) is complex and allows for many different kinds of menus, multiple MPEG-2 video tracks, surround sound Dolby-encoded audio tracks, and even fairly sophisticated scripting. DVD Studio Pro provides support for all these features at various levels of complexity.

Unlike when you're using iDVD, you should have your media ready before you start authoring. Video can be edited and imported from other applications such as iMovie and Final Cut Pro. Other useful programs to have include some sort of audio filtering and editing software as well as a graphics editing program.

DVD requires video to be stored as MPEG-2 files with the audio stored separately as AIFF or AC3 files. So, all your video will need to be compressed to MPEG-2 before you can import it into DVD Studio Pro. There are a number of hardware and software tools for performing MPEG-2 compression, with some of the hardware based solutions costing in excess of $100,000. Apple provides a free MPEG-2 QuickTime CODEC (COmpressor & DECoder) with DVD Studio Pro which uses the AltiVec processor in the G4 to compress video. With the CODEC installed, you can perform MPEG-2 compression from any program that can export and compress a QuickTime movie such as iMovie or Final Cut Pro.

Exporting video produces two files: an MPEG-2 video file and an audio file in AIFF format. When you build your final DVD, these two files get multiplexed together before being written to disk.

The MPEG Exporter is reasonably speedy for a software compressor, hardware decoders will perform more quickly but the cost is usually prohibitive. Exporting a video file averages around 4 minutes for each compressed minute of video when running on a 400MHz G4 PowerBook. Apple has recently improved the compression speed, and the upcoming iDVD 2 software has an almost 1:1 ratio.

The higher the quality of the video the more disk space it will use. With Apple shipping 80GB hard drives in models today, you can fit quite a few hours of high-quality video.

You can compress your audio files into AC3 format using the included "A.Pack" audio compression software. A.Pack takes your AIFF files and exports them in AC3 format. In addition to handling compression, A.Pack allows you to create Dolby 5.1 surround-sound mixes through a simple drag-and-drop interface to give your DVD the full cinema sound experience.

Authoring your DVD

With your media prepared, you're ready to start authoring. DVD Studio Pro's interface consists of a Graphical Display window that provides a flowchart view of your project, an assets window where you can access your media, and an assortment of tool and Inspector palettes for creating objects and setting parameters.

DVDs comprise several different types of components. Track components contain video and audio files and can be divided into chapters to facilitate non-linear playback. Menu components can contain still images or movies, and include button definitions and branching information. Slide Shows can hold a series of still images that can be stepped through, while Scripts allow you to create complex interactivity.

You begin authoring by importing your media into the Assets window. Your audio and video files must be imported separately, along with any images or movies that you'll use for menu creation.

Authoring takes place in the Graphical Display window. If you've ever used any kind of visual database or programming package, you'll feel right at home in DVD Studio Pro. You carry out all your authoring tasks by creating different types of objects and then 'wiring' them together to create your disc's logic and structure.

The Inspector palette lets you specify how components are related and linked. Menu components, for example, are usually linked to other menu components or Tracks. Such links are

indicated by simple flowchart lines in the Graphical Display window.

The Inspector palette displays a pop-up menu for each button on a DVD remote control (the DVD spec requires all players to have a minimum number of buttons). From these pop-ups, you can specify how components should link to each other. For example, if you select a Track component, you can use the inspector window to choose other Track components that will play when the user hits particular buttons on their remote. In this way, you can quickly create all links and logic for your project.

For more complex interactions, you'll want to use the robust DVD scripting language, which offers arithmetic operations, conditional branches, and global and local variables. If you've done any scripting in HyperCard or Macromedia Director, you'll have no trouble with DVD scripting.

At any time while authoring, you can press the Preview button to view an individual track or component, and to test logic and branching. Video is passed through your computer's DVD playback hardware so you can see exactly what your project will look like.

Creating Menus

You can use any TIFF, PICT, or Photoshop file as a menu screen, meaning you can create your menus using any paint or image-editing program. However, it would be impractical to use anything besides Photoshop, thanks to DVD Studio Pro's excellent support for multi-layered Photoshop documents.

DVD Studio lets you access any individual layer within a Photoshop document, allowing you to create a single document with each of your menu's button states stored in separate layers. The ability to work with layered Photoshop files not only makes it easier to create buttons and highlights, it also means you only need a few layered Photoshop documents rather than dozens of separate documents that have to be imported and stacked in a particular way.

If you've spent much time watching DVDs, you've probably seen menu pages consisting of a number of small video clips playing simultaneously. To create such a menu, you'll need to build the composite yourself using a video-compositing application such as Adobe After Effects or Apple's Final Cut Pro.

In other words, if you really want to create a complete desktop DVD authoring station, you'll need to plan on using several applications besides DVD Studio Pro.

Apple has included a separate subtitling app that allows you to import a movie and enter subtitle text with matching time code cues. The subtitle editor exports your text into a subtitle stream that can be imported into DVD Studio Pro.

Burning your DVD

When you're ready to output your project, you simply choose the Build command from the File menu. DVD Studio Pro will then multiplex your video and audio into the appropriate DVD Video format and output the video to a VIDEO_TS folder on your hard drive. With the latest version of the Apple DVD Player, you can play the contents of this folder, just as if it were a DVD inserted in your drive.

As one would expect, DVD Studio Pro can write your project directly to Apple's new SuperDrive to create one-off DVDs playable in most console or computer-based DVD players. Apple's web site has a list of DVD players that are compatible with DVD-R discs, most of today's DVD players will specifically say if they can play these discs.

There are two kinds of DVD-R media: DVD-R for Authoring and DVD-R for General. Apple's SuperDrive can only write to DVD-R for General discs, which currently come in 4.7GB sizes. You can buy DVD-R discs from the Apple Web site, which guarantees getting the proper media.

DVD Studio Pro can also write your project to a DLT tape drive. If you're creating a disc that's bigger than 4.7GB then you'll need to output to either a tape drive or your hard drive. You will the need to take the disc image to a DVD production house for mastering on to a DVD-R for Authoring Disc and send this off for duplication.

DVD Studio Pro is a very impressive piece of software. Its interface is well-suited to DVD authoring, and its feature set is comprehensive. DVD Studio Pro offers an excellent DVD authoring solution for both serious home-users and professional creative types.

Macs enjoying resurgence at Curtin

Curtin's computer shop also sells Windows PCs, but "on the hardware systems side the Macintosh is definitely predominant, particularly more on the sciences side of the university than the business side", says Maounis, particularly because of the favourable pricing the university is able to get through its relationship with the AUC.
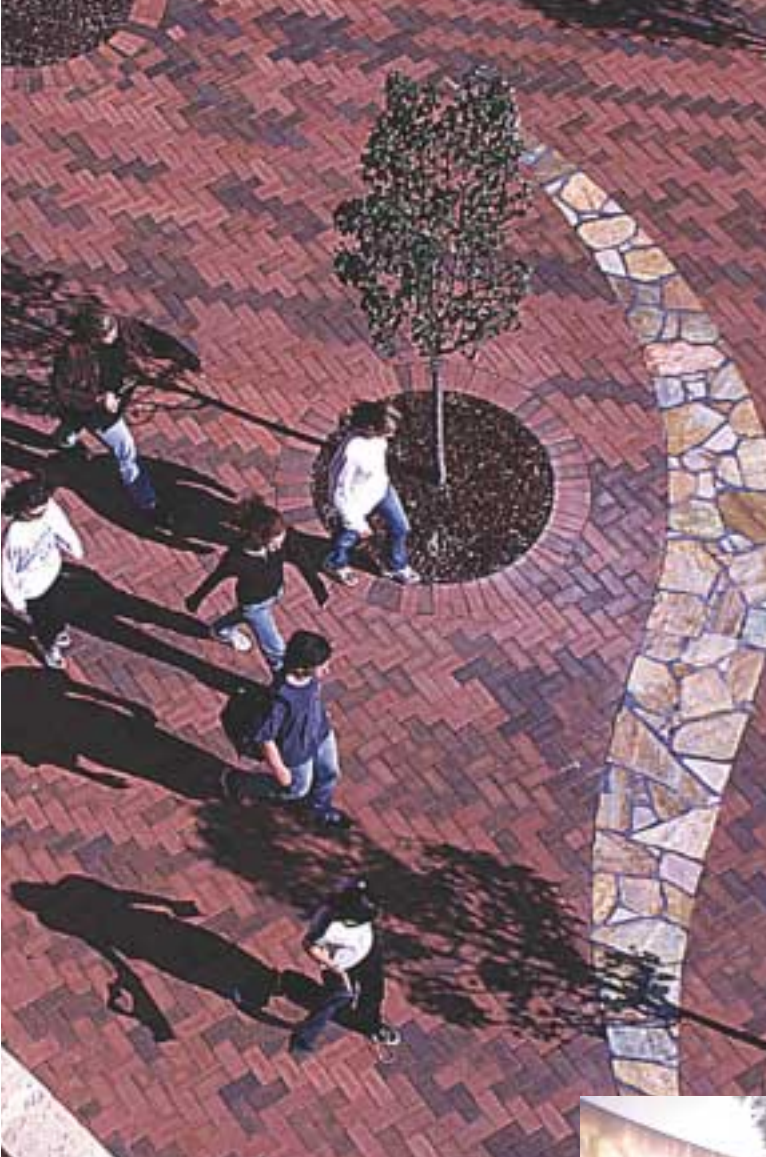
"Pricing is a major benefit of the AUC that we can pass on to students, departments and staff. This is particularly true with the promotions they do at the beginning of the year — mainly with retail shops on campus and anything to do with the selling of computers."

By David Braue

Many universities offering technical courses are using administrative reasons to justify consolidation on the Wintel platform. Despite pressure put on them for several years to abandon the Macintosh in favour of Wintel systems, the Mac faithful at Perth's Curtin University of Technology have remained true to their beliefs and are now being rewarded with an even stronger official commitment to Macintosh as Curtin returns to its earlier dual-platform strategy.

As it should be: Curtin was one of the Apple University Consortium's earliest members, having joined in the late 1980s. Since then, the university has remained extremely active in all aspects of the program, from conference attendance to competition for AUDF grants. More than 500 Macintosh systems are spread throughout computer labs on the university's several Perth campuses, particularly concentrated in areas such as the Department of Biomedical Sciences, Physiotherapy, Multimedia, Aboriginal Studies, and others.

Although many students come to uni with Windows PCs, many of those same people end up buying Macintosh systems — particularly iBook and G4 Titanium notebooks — once they get involved with their courses, says Maria Maounis, purchasing offer within Curtin's computer shop.

Better purchasing arrangements are only one part of the benefits of the AUC, however. The university also makes good use of the AUC's WorldWide Developers' Conference (WWDC) scholarships, and sends good-sized groups of delegates to the AUC Academic and Developers Conferences.

"I was really attracted to Apple by their really good object-oriented technology and WebObjects development technologies," says Dr Ashley Aitken, a senior lecturer in Curtin's School of Information Systems and three-time recipient of AUC funding to attend the WWDC in the US. "Apple is producing really good, leading-edge and good quality stuff, and all the things I teach in my lectures they seem to do in their libraries."

"The AUC is really the thing that's keeping Apple and their tools alive within the unis," Aitken continues. "Being an academic, I sometimes worry I'm not in contact with the real development

students on both sides of the operating system fence, the university's association with the AUC is providing impetus for many at Curtin to investigate the latest Apple has to offer.

"The [Apple University Development Fund] seeding grants have been very successful," says lecturer Rod Kevill, who serves as Apple University Development Fund co-ordinator and works in Curtin's Centre for Educational Advancement and Staff Development. Curtin has been consistently well represented in terms of AUDF grants, with more than a half-dozen grants received by Curtin staff and students in recent years.

"OS X is pushing things along a bit, and even our Computer Science people are more interested in the Mac because OS X has a Unix base," adds Kevill. "They like that the Mac lets them get to grass-roots Unix and MacOS 9 on the same machine. And as you get more interest in the platform locally, you also get more interest when offers come around from the AUC."

world, but through Apple - which has been nice enough to send me to the WWDC three times - I've really been able to develop my knowledge of the tools I talk about. I've been able to make sure I'm teaching what's being used on real projects in the real world."

Recognition of the progressive nature of university development was part of what led Ian Rouse, currently serving as acting general manager of Curtin's Information Management Services division, to relax the one-platform goal of his predecessor and reaffirm the university's commitment to allowing individual departments to standardise on the Mac platform as appropriate.

"I know some other universities have moved completely to Wintel, but given the range of things we have running at Curtin, it would be a completely illogical thing to do," he explains. Administering both Macs and Wintel systems "has created some problems, but I don't think they're insurmountable. I always counterbalance those issues created by having both Mac and Wintel with the overwhelming benefit many people get from using Apple products. From my history I'm a Wintel person, but I'm totally committed to Curtin maintaining both Apple and Wintel because from a university perspective it's got to be the right choice."

Rouse's renewed commitment to the Macintosh has been warmly welcomed by Mac enthusiasts within Curtin, where even die-hard Wintel users are warming to the possibilities of the Macintosh - and, in particular, Mac OS X. With the Mac now returned to strategic status and OS X piquing the interest of

Whether appealing to developers with a love of cutting-edge Mac technology or helping systems administrators resolve some of the more practical issues they face every day, the AUC's ongoing presence at Curtin has helped Mac advocates continue to carry the flag for the platform. And judging from the comments of those who've remained actively involved in the AUC, the best direction for the AUC in the future is even more of the same.

"I'd like to see greater involvement in the AUC from other people like myself putting up better solutions for what we do," says Paul Sparrow, computing systems officer within Curtin's School of Biomedical Sciences, where more than 60 Macintosh systems dominate the student computer labs. "Support groups for Mac Manager are all US-based, and sometimes it's nice to talk to somebody closer to home. I've used some of the contacts I've made through the AUC to overcome problems, and networking with other members is very helpful. I learn a lot from the IT officers at other AUC universities, so we don't have to reinvent the wheel all the time."

See www.curtin.edu.au for more information about Curtin.

From Pollachi to Perth

By David Braue

A group of students from a southern India technical college have completed the first step on their way towards earning a master's degree from Edith Cowan University (ECU) after their affiliation with the AUC brought them to Perth for eight weeks' intensive study earlier this year.

The students hail from Dr Mahalingam College of Engineering and Technology (MCET) in Pollachi, 250 km south of Bangalore. While most Indian technical colleges focus on Windows skills, MCET has taken the unusual step of embracing Macintosh technologies in a world where Windows PCs reign supreme.

Just in the past year, MCET has set up cross-certification arrangements with Canada's Cambrian College of Applied Arts and Technology; Adobe, Inc.; Autodesk; ANSYS; ACCEL;

MCET students from India underwent an intensive 8-week multimedia course at ECU

Microsoft; and a number of Indian training programs that founder Dr N Mahalingam believes will make its program unique in that country. It is certainly unique in terms of Australia's academic community, which last year welcomed it as the AUC's first associate member outside of Australia.

That relationship quickly fostered discussions about the possibility of MCET students doing training at an AUC member university, and ECU's strengthening international focus — and its well-equipped new communications program (see p. 8) — made it a perfect destination. Discussions earlier this year led to a contingent of ten students and two instructors making the trip to Perth, where they underwent an intensive course of study for two months from May 18.

"The program is offered in many forms to international students," says Ron Oliver, professor of interactive multimedia within ECU's School of Communications and Multimedia (SC+M). "The MCET students passed with flying colours, and now they have credits on their transcript and they're in an advanced position to come back. The advantage of offering programs in those areas is that if people like your programs, at a later stage these people are likely to want to come back and do a Master's;

now an avenue has been opened for them."

Feedback from the Indian students was extremely positive, even though some of them found the stylistic and grammatical requirements of submitting work at ECU to be somewhat onerous. Nonetheless, comments indicated that the program had been beneficial for them: "we actually expected staff there to be strict and [that it would] be difficult to communicate with them, [but] they made us feel at home," reported one student on returning to Pollachi.

Two months in the intensive program were equivalent to an Executive Certificate in Interactive Multimedia, and next year the students may return to do another eight weeks and qualify for a Graduate Diploma in Interactive Multimedia. A further twelve weeks' study will qualify the students for a Master of Professional Communication.

Hoping to foster a longer-term relationship with MCET, in November ECU will send an instructor to Pollachi to teach an additional dozen students who were not permitted to travel to Australia due to visa restrictions. The two institutions are also planning to set up a videoconferencing system that will let them stay in close contact. ECU will also soon welcome more than 40 Norwegian students attending on a regular government-funded scholarship that encourages those students to study abroad.

"Everybody's very positive about what happened," says Brian Shoesmith, associate professor within SC+M and one of the key figures in helping bring the MCET students to Perth. Shoesmith, who will visit Pollachi and Mumbai in October, hopes to build on the AUC's ties with MCET in an attempt to raise ECU's profile on the Subcontinent.

Doing so would support ECU's own mission to extend its reach across Asia. ECU is already delivering Diploma in Multimedia courses to more than 400 students in partnership with Malaysia's Academia Infotec Mara, and recently signed a memorandum of agreement with Universitas Tamura Nagara in Jakarta.

India, too, is on the agenda, particularly given the increased friendship between MCET and ECU. "We are eventually going to be quite big in India," says Shoesmith, "and if they want to do our courses we want them to do them on Macs."

How do you become a **Macintosh** Developer?

By Andrew Jeffrey

The release of Mac OS X, with its Unix heritage, offers many developers an opportunity to re-explore the Macintosh as a viable development platform. Notwithstanding the increase in sales Apple has been experiencing in the past few years, along with the notion that a Mac really is the 'computer for the rest of us', many software developers who previously had dropped Macintosh support are now re-embracing the Mac community.

So where do you begin if you want to explore Macintosh development? The following are some of the best places to start:

Apple Developer Connection http://developer.apple.com

This is a great starting place for information about the resources Apple has for developers. Includes details on the various ADC membership levels, which start with free online membership and go right up to the Premier membership costing US$3500. The higher your level of membership, the greater your access to pre-release software, hardware discounts and special offers — but don't worry, free membership offers quite a lot.

There is even a special student membership which allows students to access resources at reduced cost. Free resources include documentation and technical notes on Apple technologies; developer tools such as Project and Interface Builders; tutorials an sample codes; news and updates; and business case and marketing information.

To register for the ADC, visit http://connect.apple.com, which gives you access to a special 'Members Only' area where you can download seed software and other tools.

Metrowerks http://www.metrowerks.com and CodeWarrior University http://www.codewarrioru.com

Metrowerks and their CodeWarrior software are synonymous with Macintosh development. In fact when Apple moved to the PowerPC architecture in 1994, CodeWarrior was the only development tool that allowed you to create native PPC code. CodeWarrior 7 (just released) is a fully integrated development environment (IDE) that supports C, C++ and Java development for Classic Mac OS and Mac OS X.

CodeWarrior is not an easy product to master, which is why Metrowerks offer training, through CodeWarrior University, on how to use their products as well as learning programming. Registration is easy and free and each course is led by an on-line mentor who you can contact for assistance in any of the courses. You will need to get some resources such as books and software, but once you have these you can attend the virtual University and start your course.

Having completed one of the on-line courses I highly recommend the web site for all prospective developers.

O'Reilly Mac Network http://www.oreillynet.com/mac/

O'Reilly is a computer book publisher that has for a long time been associated with Open Source technical publications. In the past year Apple and O'Reilly have formed a partnership to produce many technical publications on Mac OS X. The first of these include the Learning Carbon and Learning Cocoa books, which have been available since May and are highly recommended for prospective OS X developers.

The O'Reilly Network is an essential portal for developers interested in open and emerging technologies, including new platforms, programming languages, and operating systems such as Mac OS X. The site provides in-depth technical information, clearly and consistently, for expert developers. O'Reilly have created a special Mac Developer Centre with articles, links to news and updates as well as sample chapters from their Macintosh related books.

REALBasic http://www.realbasic.com

REAL Software have created what many thought was impossible, an easy way for the rest of us to create Macintosh programs without much programming experience. REALBasic is very similar in style to VisualBasic and is can even import VB programs with only minor modification required. While it does use a BASIC type language it does it in a very structured way, which gives good grounding for programmers to go on and learn languages such as Objective C.

REALBasic is very powerful and has can create applications for Classic Mac OS, Mac OS X and Windows from the same source code. It also allows users to create programs, which can interact with SQL databases, internet-enabled applications as well as link with programs such as Microsoft Office. Visit the web site to download a free trial version and Education discounts are available when you are ready to purchase.

A more in-depth review of REALBasic will be in the next issue of *Wheels for the Mind*.

MacSurfer http://www.macsurfer.com

This is not strictly a developer web site, but it's still one of the best places to find out what's going on in the Mac world. It's loaded with summaries of Mac news as well as links to the most popular Mac news and discussion web sites. Well worth a daily visit.

Making QuickTime Work in Windows XP

Recent changes to the structure of Microsoft Internet Explorer 5.5 SP2, and the newly released version 6.0 (built into Windows XP), remove support for the Netscape-styled plug-ins previously used by QuickTime until version 5.0.2. In the future, QuickTime support will instead be handled through an ActiveX plug-in that can be set to automatically download when a Windows user visits a QuickTime-enabled Web page (for example, www.apple.com/quicktime).

From Apple Developer Connection comes an easy solution. First, you'll want to set each QuickTime-enabled page to check that the QuickTime ActiveX control is installed. Or, you can do this just once if you know all your visitors will be coming through a single main page. Either way, perform this check using the following code:

```
<OBJECT CLASSID="clsid:02BF25D5-8C17-4B23-BC80-D3488ABDDC6B"
width="160" height="144" CODEBASE="http://www.apple.com/qtactivex/qtplugin.cab">
<param name="src" value="sample.mov">
<param name="autoplay" value="true">
<param name="controller" value="false">
<embed src="sample.mov" width="160" height="144" autoplay="true" CONTROLLER="false"
PLUGINSPAGE="http://www.apple.com/quicktime/download/"></EMBED></OBJECT>
```

Substitute "sample.mov" (in both SRC attribute elements) with the URL of the actual movie to be played. You should also change the HEIGHT and WIDTH parameters to match the height and width of the movie (in pixels).

Pro create.

The new Power Mac G4. Blazingly fast with up to dual 800MHz G4 processors, and featuring our revolutionary iDVD† software and SuperDrive, for creating and burning your own custom DVDs.**