Modernising Scientific Careers

An important official consultation document on Modernising Scientific Careers (MSC) was launched by the Department of Health on 26th November 2008. You can download this document from the Department of Health website – www.dh.gov.uk/en/Consultations/Liveconsultations/DH_091137

As this is a consultation exercise, each ACEM member can comment on the proposals using the online questionnaire, but you will need to act quickly. The closing date is 6th March 2009.

The ACEM Committee are aware of this MSC development and a fuller report of involvement and response will appear in the next edition of the Newsletter.



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As expected, Albuquerque was hot and temperatures, at times, reached 43ºC! (too hot for the editor!). Albuquerque also prides itself that it has sunshine on 355 days a year. The editor was there for 5 days and it rained on three of them (see photograph of the electrical storm that came with the rain – storms in the USA are quite spectacular!). Rain spoilt the reception held in the early evening on the day before the meeting proper started. This reception was held outdoors at Albuquerque Zoo after normal public viewing hours. It had been planned that barbequed food would be available at the reception, but the rain stopped this activity (but at least the beer was good!). Midway through the meeting, an evening trip was organised to Sandia mountain, which offers spectacular views of New Mexico (11,000 square miles of panoramic views). The 'flight' to the summit in the cable car was spectacular and the food was excellent in the summit restaurant. The cable car used to reach the 10,378foot summit boasts the longest cable run in the world (2.7 miles). The return 'flight' down the mountain in complete darkness was, however, not to everybody's taste.

"Storms in the USA are quite spectacular!"

This American microscopy meeting was extremely well run and the event organisers even provided regular coach services between local hotels and the conference centre.

This years' meeting will be held in Richmond, Virginia - if you do get the opportunity, go and sample American hospitality.

On route to Albuquerque, the editor also visited the Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia to see the EM facilities there. As expected, the CDC EM unit was found to be extremely well equipped with very modern electron microscopes and state of the art ancillary equipment. It is a great pity that similar investment in new equipment for both pathology and virology is not more common here in the UK.

The second microscopy meeting attended was the 14th European Microscopy Congress (EMC) held in the historic city of Aachen, Germany between 1st and 5th September. Again, this was an extremely well attended meeting with about 1500 attendees. The trade show was not as impressive as the Albuquerque microscopy meeting, but was, none the less, well patronised with about 50 exhibitors. The meeting organisers were rather overwhelmed by interest in this meeting and commented on the growing interest in microscopy within many different disciplines. If you are interested, the 2009 EMC meeting will be held in Graz, Austria.

The third microscopy meeting attended was the Glenicke Workshop 2008 held at the Robert Koch Institute (RKI), Berlin, Germany between 6th and 7th November. The main theme of the meeting was the use of electron microscopy in infectious diseases and pathogen research. Although smaller than the above two conferences, the meeting was well attended with participants from the UK, mainland Europe, USA, Brazil, India, Malaysia and Singapore. The meeting highlighted the fact that EM is still an important method for both diagnosing and investigating infectious agents despite the relentless introduction of molecular diagnostics in most virology laboratories worldwide. At the end of the two-day meeting delegates were taken to the Old National Gallery (Alte Nationalgalerie) in Berlin, where we learned about the significance of art in German history, particularly during the Nazi era. This 'cultural' visit was rounded off by a meal in a wonderfully atmospheric restaurant located in what had been part of East Berlin. Good food, wonderful service and excellent company!

Attendance at these microscopy meetings produced a significant uplift in spirits when compared to the generally depressing apathy shown towards microscopy here in the UK. Certainly within pathology, we desperately need investment in modern equipment to match developments and interest in microscopy seen elsewhere in the world


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PHOTOGR

Key

1: Sandia Mou
2: Spectacular
3: Immigration
4: Welcome to
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7: Berlin Old N
8: The British C
the Robert K
9: Restaurant
10: Leeds ACE

This Issue's Tailpiece



Register for the Cardiff ACEM meeting

www.pathsoc.org.uk

Upcoming Events/ Information

ACEM 12th Annual meeting - Satellite meeting to The Pathological Society of Gt Britain & Ireland

Thursday 2nd July 2009.

9.00am	Registration
9.20 – 9.55am	Application of Electron Microscopy within Drug Discovery Ms Alison Bigley - Laboratory manager, Toxicology EM, Astra Zaneca, Macclesfield. Chair: Dr Jan Hobot
10.00 – 10.30am	Advances in Clinical Electron Microscopy, 1963 – 2000: a personal view Dr Ray Griffin, Senior lecturer in Electron Microscopy and Cellular Pathology (retired) University of the West of England , Bristol . Chair: Mr Bart Wagner
10.30 – 11.00am	Coffee break
	Joint meeting of: the Association of Clinical Electron Microscopists and the UK Renal Pathology Group, supported by a grant from the Renal Pathology Society. 11.00 to 1.00pm
11.00 – 11.50am	The subpodocyte space: implications for glomerular physiology and pathology. Dr Chris Neal, Research Fellow, University of Bristol Chair: Dr Ian Roberts
12.00 – 12.50pm	When should a renal pathologist request EM? – The evidence. Dr Guillermo Herrera, Consultant Renal Pathologist, President of Society for Ultrastructural Pathology & Associate Director, Nephrocor, Arizona, USA Chair: Mr Bart Wagner
12.50 – 1.00pm	Group photograph
1.00 - 2.00pm	Lunch break.
2.00 – 2.15pm	Technical EM - EQA feed back. Ms Tracey de Haro, Senior Biomedical Scientist Leicester Royal Infirmary Chair: Mr Bart Wagner
2.20 – 2.40pm	IBMS Diploma in Ultrastructural Pathology and Certificate in Electron Microscopy Portfolio and exam feed back from first cohort. Ms Pat Tarpey, Chief Biomedical Scientist, Manchester Royal Infirmary Chair: Mr Bart Wagner
2.45 – 3.25pm	EM technical EQA – the Australian experience. Mr John Stirling, Principal Medical Scientist, Adelaide, Australia. Chair:
3.30 – 4.00pm	Tea break
4.00 – 5.00pm	ACEM AGM. Open to ACEM members and non-members. Chaired by: Dr Tim Ryder, Consultant Clinical Scientist, Charing Cross Hospital , London

Publications

1 Eyden B, Banerjee SS, Shenjere P, Fisher C.
The myofibroblast and its tumours: a review. Journal of Clinical Pathology 62: 236-249, 2009

2 Eyden B
A structure resembling basal/external lamina on the surface of plasma cells, and a discussion on intercellular contacts between hemolymphoid cells. Ultrastructural Pathology 33: 16-20, 2009

3 Eyden B
Fibronexus junctions associated with human in vivo endothelium. Ultrastructural Pathology 33: 28-32, 2009

4 Eyden B, Chakrabarty B, Hatimy U.
Carcinoma versus cytokeratin-positive lymphoma: a case report emphasizing the diagnostic role of electron microscopy. Ultrastructural Pathology 33: 33-36, 2009

5 Eyden B, Wang G, Yao L.
Epithelioid sarcoma: a case report with ultrastructural confirmation of myofibroblastic differentiation based on fibronexus junctions. Ultrastructural Pathology 33: 61-66, 2009

6 Houreih MA, Lin AY, Eyden B, Menasce LP, Harrison J, Jones D, Fotberg R, Chejfec G, Banerjee SS
Alveolar rhabdomyosarcoma with neuroendocrine differentiation – report of 3 cases.
International Journal of Surgical Pathology 17: 135-141, 2009

7 Curry A and McWilliam LJ (2008) Electron microscopy: its future in renal disease.
British Journal of Renal Medicine 13, 19-20.

8 Khwaja S, Curry A, Chaudhry IH, Green KMJ (2008) Can keratinocytes cause failure of osseointegration?
The Journal of Laryngology & Otology. Published online December 2008.

9 Dobbs RJ, Dobbs SM, Weller C, Charlett A, Bjamason IT, Curry A, Ellis DS, Ibrahim MA, McCrossen MV, O'Donohue J, Owen RJ, Oxlade NL, Price AB, Sanderson JD, Sudhanva M, Williams J (2008) Helicobacter hypothesis for idiopathic parkinsonism: before and beyond. Helicobacter 13: 309-322.

10 Ellis DS, Dobbs RJ, Dobbs SM, Curry A, Bjamason IT, Williams J, McCrossen MV, Weller C, Charlett A (2007) Duodenal enterocyte mitochondrial involvement and abnormal bowel function in idiopathic Parkinsonism. In 'New Trends in Alzheimer and Parkinson Related Disorders: ADPD 2007' Editors Hanin I, Windisch M, Poewe W and Fisher A. Medimond International Proceedings, 269-272.

ISSUE 06 JUNE 2009

JOURNAL OF ASSOCIATION OF CLINICAL ELECTRON MICROSCOPISTS

ACEM ne


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Dr Brian Eyden, who is a member of the ACEM committee, has made several contacts in China in relation to his diagnostic & research work at the Christie Hospital in Manchester. These contacts have resulted in several visits to China, and the article published here outlines his experience of clinical electron microscopy in China.

It makes fascinating reading!

Finally, the painting is one of Brian's and this was inspired by his visits to China.

ACEM
www.acem.org.uk

Clinical Electron Microscopy in China - Personal Reflections


2

In recent years, I have had the opportunity of seeing something of Chinese pathology and Chinese electron microscopy. My first Chinese contact was Dr Ru Yong-xin (Dr Ru – figure 2) who trained with me in Manchester in 2001-2002 in diagnostic electron microscopy; while in 2005 on my first visit to China, attending the International Academy of Pathology conference in Beijing, I met him again, as well as two further Chinese pathologists. As a result, I have had the opportunity of visiting some of China's biggest cities – Beijing, Tianjin, Shanghai and Hangzhou – home collectively to 50 million or more people, and seeing something of how electron microscopy is used in medicine and pathology.

Dr Ru trained with me following his own medical studies in China. His tutor in Tianjin, Professor Liu, had run an Electron Microscope Unit in the Institute of Haematology and Blood Dis Hospital in Tianjin for many Although off the beaten trac regards tourists, Tianjin is th torical Tientsin and the huge mercial centre just south ea Beijing. A vibrant city of son million people, it also has o China's largest comprehens cancer centres. I visited Dr a second time in December and found a mixture of the the new, compared with my visit in 2005. A completely n hospital block had appeared grounds since my earlier vis while Dr Ru's office was stil housed in the ancient-lookir building which had been the

ACEM now have two Australian members!
John Stirling who wrote an article for the ACEM newsletter is to join us in Cardiff and give a presentation on EQA - Welcome to the UK John!


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quarters of the Japanese army of invasion in the 1930s. Dr Ru's electron microscope was housed in yet another building, where the corridor leading to the microscope room took one back in time ... old wooden cupboards containing drawers housing Professor Liu's resin blocks held together by tape (figure 3) and filed away in brown paper envelopes; chemicals in glass screw-top bottles with labels in Chinese characters; instruments mechanical and electrical, unused and gathering dust; some ancient computers and old light microscopes; and glass beakers with glass stirring rods ... However, the electron microscope room was pristine. Dr Ru has revitalised the EM Department and created a busy clinical practice, applying morphological and myeloperoxidase EM to the bone-marrows of some 800 patients a year, providing data of clinical and research value. There is a technical staff of three (needless to say, all delightfully friendly) and a 24 year old Hitachi H600 electron microscope (figure 2). The bone-marrows arriving in the lab each day are fixed in glutaraldehyde overnight, collected up during the week, processed into epoxy resin every Friday, and polymerised over the weekend. Everything is sectioned on Monday without toluidine blue sectioning and Dr Ru spends all day on Tuesdays – no matter how many specimens – examining the ultrathin sections. It's all very regimented and works like clockwork.

One contributing factor to the operational success of Dr Ru's unit, quite apart from the touching respect for duty and industry that you can still find in China, is the servicing and maintenance of the electron microscope. This is carried out by a service engineer permanently employed by the institute, who is thus on site at all times. This is a feature of electron microscopy not seen in the UK for some decades, but its value is obvious: with such care, the microscope looks and works 10 years younger than its real age, and when I used it, it had high contrast and excellent image stability. They still use conventional negatives but the increasing workload has prompted the institute to invest in a new instrument in the coming year, which will no doubt have digital facilities.

This is an unusual example of an EM facility bucking the trend of downward activity and workload that has been such a familiar story to everyone in diagnostic EM over the past decade or so. Why is Dr Ru analysing 800 bone-marrows a year and providing clinically useful data when nothing like that kind of activity is going on in the UK? A possible answer, apart from the population dimension, is that China still values academic research, which is going out of favour and fashion in the UK and the USA, where everything has to be applied – hopefully with a commercial and income-generational dimension. China is pushing for higher research standards by financial inducements: pathologists in China receive gifts of money per unit of Impact Factor of the journal they publish in: if they publish in *The Lancet* or the *New England Journal of Medicine*, where peer-review is at its most critical and Impact Factors very high, this can mean a large sum of money, which goes to the authors, not their institution.

Dr Ru's example may be exceptional but certainly other large centres in China have electron microscopes. At the Beijing University Health Sciences Centre they have used a JEOL 100CX for years, mainly for renal diagnosis but also for lesser numbers of nerve, muscle and tumour specimens, just as in the UK. Probably the stimulus for this came from their professor, who had spent a time at the Karolinska Institute in Stockholm doing electron microscopy in the 1980s – something of the heyday of EM. During my visit to Beijing last year, their continued commitment to EM was evidenced by the fact that they were installing a new JEOL 1400 instrument.

In Hangzhou, a city just south of Shanghai with twice the population of Manchester's 3 million and famously described by Marco Polo as "paradise on earth" on account of its beautiful West Lake (figure 1), the Medical School (see figure 4) also has an electron microscope, a new Philips Tecnai, mainly for renal diagnosis, as well as the latest Leica ultramicrotome. However, in the Shanghai Cancer Hospital, just up the road from Hangzhou, where I was hoping that the 20-30 million inhabitants of the city would give rise to a significant tumour incidence which in turn might need electron microscopy, they had an old electron microscope but no-one to use it and interpret ultrastructure. They get by with immunohistochemistry and molecular markers, but have use of a nearby University instrument when pushed. This is a common occurrence in China, I think: there are instruments in place but not the staff with ultrastructural interpretational expertise to make full use of them. The comprehensive cancer centre in Tianjin, comprising a University, a hospital and a research institute, surprisingly perhaps, does not have an electron microscope, so things are patchy.

Whether China will contribute significantly to ultrastructural medicine and pathology in the future will depend on the balance which molecular biology will exert over traditional investigative procedures, but one is already seeing an increasingly large proportion of papers in pubmed searches – on tumour electron microscopy, for instance – coming from China. As in the West, the coming few years will be critical, and the future of EM in China will also depend on the presence of individuals with a curiosity for structural biology combined with the demonstration of research and clinical utility.

Brian Eyden
Manchester, May 2009

PHOTOGR
Key
1: The West La
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3: Resin blocks
4: The Medical


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6: Limestone p
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7:Pavilion on th
Hangzhou, Sou

Please notify the editor of any publications from the ACEM membership as these can be included in future issues. Contact Alan Curry at alan.curry@cmft.nhs.uk

The Society of Electron Microscope Technology (SEMT) will be holding its annual one day meeting on 16th December 2009. If you are interested in attending this meeting, then please contact David McCarthy at david.mccarthy@pharmacy.ac.uk or visit the SEMT website at www.SEMT.org.uk

Strategy for the Future of Diagnostic Electron Microscopy

You will be aware that the ACEM committee has been trying to develop a national strategy for the future of our diagnostic EM service. To provide the data on which to base our strategy, a questionnaire was distributed in December to all the diagnostic EM units that ACEM are aware of. Key staffs in 48 units in England, Scotland and Wales were requested to provide information about the units they manage. There have been responses from 38 units to date.

The data is currently being analysed, but already some interesting information is beginning to emerge. On the question of the instrumentation we are using, the average age of our TEMs is 20 years (range 1 to 38 years!). More than 60% of our microscopes are over 15 years of age. Clearly the replacement of capital equipment will need to be a priority in any strategy we develop.

Our other key resource, staff, will also need to be a priority. Nearly two-thirds of our clinical scientists will have retired within 5 years. Our BMS staffs are little better placed with nearly half retiring in the next 5 years. We have also discovered that staffing is having a major impact on our turnaround times. Two-thirds of the units polled are not achieving their desired TAT and cite staffing as the most common reason for failing to reach their targets.

A more comprehensive report on the survey will be presented to the ACEM AGM in Cardiff. Members will be invited to discuss how we can carry our strategy forward in the light of this very worrying data.

Tim Ryder
Chairman, ACEM

NSCAG Funding Success

Congratulations to Bart Wagner at the Northern General Hospital in Sheffield - As of 1st April 2009 his EM Unit has received NSCAG funding to support the Ehlers-Danlos diagnostic service. There are now two designated NSCHG funded EM units supporting this service: Sheffield & Charing Cross Hospital in London.

ACEM Committee changes:

New Committee Members Required

Most of the current ACEM committee have been in post since ACEM was formed. A number of long serving members now wish to retire and hand over their roles to 'fresh blood' within the membership. The ACEM AGM in Cardiff will decide who takes on these new roles and ACEM members should give consideration to taking on some ACEM committee roles or to whom they would like to take on such roles. Positions which will need filling are:

President – Jill Moss wishes to step down.

Chairman – Tim Ryder wishes to step down.

Treasurer – Alan Curry wishes to step down.

Newsletter Editor – Alan Curry will edit the Christmas 2009 edition of the ACEM Newsletter, but then will step down from this role.

Secretary – Pat Tarpey wishes to step down in a year's time.

Member without portfolio – Brian Eyden wishes to step down.

Currently there is interest (or some names have been put forward) to fill the roles of President, Chairman and Treasurer, but the other committee posts must be also be filled at the AGM. If you have an interest in any of the positions coming vacant or would like to volunteer the name of a suitable candidate, then please contact our current Chairman, Tim Ryder. Tim will chair the meeting in Cardiff and so will need to know the names of individuals willing to fill the vacant committee positions.

We would like to thank the committee members who are standing down for their services to ACEM.

Remember – change can be good and potentially the revamped committee will send ACEM in new directions!

HPC Registration

The HPC want to ensure maximum renewals occur for Clinical Scientists by October 1st 2009. The ACS have given ACEM advanced warning of this proactive renewal campaign.Clinical scientists - your HPC registration renewal cycle is fast approaching

Please don't forget to PAY & SIGN!

As you will know clinical scientists need to renew their registration with the Health Professions Council (HPC) every two years to stay on the HPC Register and continue to practise using the title 'clinical scientist'. Here is some information about renewing your registration with the HPC.

How do I renew my registration with the HPC?

In early July 2009, we will send a registration renewal form to all clinical scientists on the Register. All sections of this form needs to be filled in, signed and returned to the HPC with the renewal payment.

Every registrant must do two things to make sure their name stays on the HPC Register:

- pay the registration renewal fee (various payment methods) AND
- send us their signed renewal declaration

We also stress that registrants must be sure to pay and sign. Even if the direct debit payment comes out of your account, you still need to complete and sign the renewal form. Biomedical Scientists will also need to renew their HPC registration by 30 Nov 2009.

www.hpc-uk.org

This Issue's Tailpiece - 2009

YOUR NEWSLETTER

All articles, however short considered for the Newsletter.

Contact Alan Curry at

alan.curry@cmft.nhs.uk

2009 is a significant year for anniversaries, some of which were recorded in the last issue of the ACEM Newsletter. Other significant anniversaries have now been brought to the editors attention:

1) It is the 250th anniversary of Kew Gardens, near London. Kew is one of the leading centres involved in research into and conservation of plants. It is currently aiming to safeguard 25% of the world's flora by 2020 – certainly a British institution we can be proud of!

2) Alcock and Brown flew non-stop across the Atlantic between June 14th and June 15th 1919, 90 years ago. Sadly John Alcock was killed in a flying accident in France before the end of 1919. However, the plane that made this historic trip, the Vickers Vimy, is now on display in the Science Museum in London.

3) Forty years ago humans first walked on the moon – July 21st 1969 Neil Armstrong uttered that unforgettable phrase as he stepped onto the moon's surface – 'that's one small step for man and one giant leap for mankind'. Although the last manned moon landing took place in 1972, NASA does have plans to return man to the moon within the next decade or so. No doubt Tranquility Base will become a Lunar Heritage Site!

4) Concorde first flew in 1969. This wonderful Anglo French supersonic airliner allowed the rich to fly between Europe and the USA for day trips! Sadly all Concordes built are now museum pieces (apart from one which crashed) and sadly no replacement supersonic airliner is in development – so much for progress in air transport, but this is probably a good thing in terms of green house gas emissions and its effect on global warming!

5) The famous Nikon F SLR camera was first introduced in 1959. This rugged and reliable high quality camera was much used by photojournalists during the Vietnam war era where its reputation was made. Famous war photographers such as Don McCullin used Nikon Fs and one saved his life in 1968 when a bullet hit a camera he was carrying on his chest!

6) The 20th Anniversary of the Berlin Wall coming down, November 9th 1989. The 28-mile (45 km) barrier dividing Germany's capital was built in 1961 to prevent East Berliners fleeing to the West. The reunited capital is now a vibrant place with much development & refurbishment of the old East Berlin going on. An excellent place to visit!

7) It is also the 400th anniversary of the telescope, one of mankind's greatest inventions (after the microscope, of course!). Attributed to Galileo, it has revolutionised our views on the solar system and the universe. Its modern equivalent, the Hubble space telescope still produces stunning images from the vastness of space that surrounds Earth. Long may it continue to operate!

8) Sticking with an aeronautical theme – the most significant aircraft ever in terms of mass transport first flew in 1969. This was, of course, the Boeing 747 or 'Jumbo jet' as it has been affectionately named.

9) This year is also the 50th anniversary of the hovercraft!

10) And finally, for the mature males of ACEM - Marilyn Monroe would have been 83years old this year!


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2: Take off of A
Vickers Vimy 1
3: Don McCulli
4: Man on the
5: Concorde
6: Boeing 747