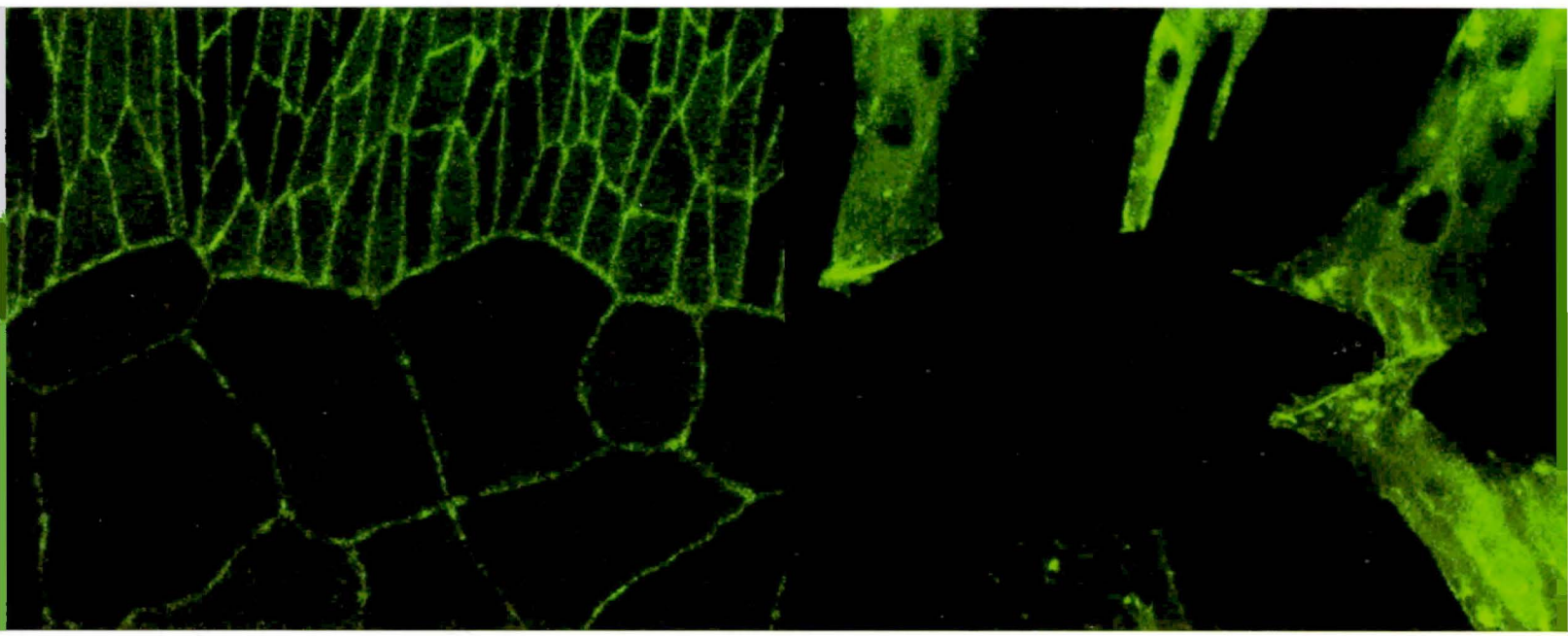


BSCB Newsletter

Summer 2002

British Society for Cell Biology

Year 2002 Travelling Fellowships

Our three international journals – *Development*, *The Journal of Experimental Biology* and *Journal of Cell Science* – are offering Travelling Fellowships of up to $4000 to offset travel and expenses involved in collaborative visits to other laboratories.

Graduate students and postdoctoral fellows, are invited to apply to the Editors of the journal appropriate to their field of study. Application forms may be downloaded from the web sites listed below.

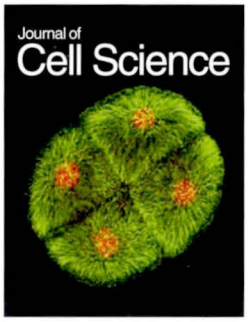
Applications should include:

- Project proposal
- A brief *curriculum vitae*
- Breakdown of costs
- Letters of support from the applicant's laboratory and host laboratory

The Editors will be guided by the excellence of the candidates and the importance and innovative quality of the work to be done.

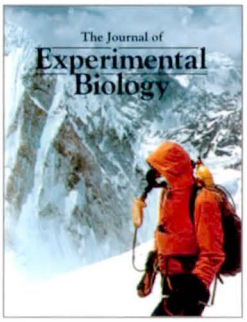
Applications should be sent to:

Professor Chris Wylie (Editor in Chief)
Division of Developmental Biology
Children's Hospital Medical Center
3333 Burnet Ave, Cincinnati, OH45229-3039, USA
Deadlines: 30 June, 30 September and 31 December 2002
http://dev.biologists.org/misc/fellowships.shtml



Applications should be sent to:

Kirsty McCormack (Production Editor)
The Company of Biologists Limited,
Bidder Building, 140 Cowley Road,
Cambridge CB4 0DL, UK
Deadlines: 30 June, 30 September and 31 December 2002
http://jcs.biologists.org/misc/fellowships.shtml



Applications should be sent to:

Dr R. G. Boutilier (Editor in Chief)
The Journal of Experimental Biology
Department of Zoology, Downing Street, Cambridge CB2 3EJ, UK
Deadlines: 30 September 2002
http://jeb.biologists.org/misc/fellowships.shtml

biology
www.biologists.org
COB
The Company of Biologists Limited

BSCB Newsletter
Summer 2002

Editorial

This is going to be a bumper year for BSCB conferences, with the postponed Martin Raff meeting, now being held in July, followed by the Abercrombie meeting in September. The Joint Spring Meeting in York went well, being blessed with fine weather. The Conference Dinner was held in the National Railway Museum, where certain scientists were found to be (former) trainspotters. Feedback has indicated that the poster sessions were too crowded and posters were not on display for long enough; this will be addressed next year. The report has been written mainly by recipients of Honor Fell Travel Awards, as has the report on an *S. pombe* meeting in Japan. Henceforth, people receiving such awards will be strongly encouraged to submit reports of the conference they attend to the newsletter. The Society is starting a new venture offering funds for undergraduates to attend the Spring Meeting: details may be found on page 2.

Sharron Vass has kindly submitted another article relating to alternative careers for scientists, this time looking at editing a scientific journal. Cristina Pelizon has continued our series on cell biology units with a description of the Hutchison centre in Cambridge. The Book Reviews continue to be popular, most of the books being snapped up soon after publication of the Newsletter: if you would like to review something, see the list on page 12 or contact me and I can ask the publisher for a copy.

We are always looking for new ideas or contributions to the Newsletter, so please contact me if there is anything you would like to write about. Meanwhile, my thanks go to all those who have submitted material this time.
The Editor

Newsletter editor: Joan Marsh
Publications editor: Simon Hughes
Design/layout: Giles Newton
Print: University Printing Services, University Press, Cambridge.
Website: maintained by Simon Hughes
http://www.bscb.org

Front cover: Left: α-catenin-GFP expressed in epithelial (top) and amnioserosal (bottom) cells of a *Drosophila* embryo during early dorsal closure. Right: Leading edge epithelial cells during dorsal closure in *Drosophila* – green cells are expressing both actin-GFP and dominant negative Rac1 under the control of an engrailed promoter. Courtesy of Sarah Woolner, Dept Anatomy and Developmental Biology, UCL.

Contents

BSCB Meeting for Martin Raff

This meeting was postponed because of the terrorist attacks in New York and Washington. The meeting will now take place at University College London on **3–5 July 2002**. If you were registered for September, you have automatically been re-registered for this July and there is no need to do anything further.

The majority of speakers on the programme for September have agreed to speak at the rescheduled meeting in July. The programme will therefore be essentially the same as previously advertised and all venues are rebooked, including the Hotel Russell for the Meeting Dinner on July 4.

Further information about the July meeting, including the Programme, is on the BSCB website (www.bscb.org). Information can also be obtained by e-mailing Annie O'Garro (a.o'garro@ucl.ac.uk).

The Meeting Organisers, Anne Mudge, Ben Barres and Bill Richardson, hope that most delegates who intended coming to the September meeting will instead come in July. They also urge you to sign up for the meeting dinner as well, which they say promises to be a lively affair.

Attention cell biology lecturers

Undergraduate bursaries to attend the BSCB Spring Meeting 2003

In order to encourage our best undergraduate students to continue a career in cell biological research, the BSCB has decided to fund a number of bursaries for these students to attend the Spring Meeting. It is hoped that exposure to cutting edge research and a chance to interact and listen to many internationally renowned cell biologists will bolster the aspirations of our undergraduates to consider pursuing science to a higher level.

The scheme will be launched in time for the next cell biology meeting in Warwick April 2003. It is expected that 10 bursaries will be offered to students who are seriously considering undertaking a PhD based in cell biology. An application form will be available in the next newsletter and through the website (www.bscb.org.uk). It is expected that the form will be accompanied by a short letter from the student explaining why they wish to attend and a paragraph of support from their course co-ordinator or supervisor of studies. It is expected that the University will undertake to pay the student's travel to the meeting. Clearly, most suitable undergraduates will not be reading this information so, if you are a lecturer to young cell biologists, please begin considering which students you may have who might benefit from such a scheme.

Applications should be made during January to the Honor Fell Award Secretary, Kathryn Ayscough (address details on p 29).

Honor Fell Travel Awards

Young BSCB members attending scientific conferences relevant to cell biology are eligible to apply for financial support in the form of an Honor Fell travel award. Last year, thanks to a generous donation from the Company of Biologists, the funds available were increased, allowing more members to benefit from this scheme. Full details are on the application form on page 28.

Hooke Medal 2002

This year's winner was Andrea Brand: an account of her Award Lecture may be found on page 19.

The Hooke medal was first awarded in 2000 and is to honour an emerging leader in cell biology. Usually, it would be expected that the medal would be presented to someone with no more than 10 years of independent research which has been conducted largely within the UK.

The BSCB invites nominations for next year's Hooke Medal from any BSCB member. These should be sent, together with a few lines outlining why the nominee would be a suitable recipient of the Hooke medal, to the Secretary, Michael Whitaker, by 31 July 2002.

SEB Presidents Medal winner

Kathryn Ayscough (pictured right), a member of the BSCB Committee and an MRC Senior Research Fellow at the University of Glasgow, has been awarded the 2002 Society of Experimental Biology President's Medal for cell biology. This is in recognition of Kathryn's work on the functioning of the actin cytoskeleton in budding yeast.

Poster prize winner at the Spring Meeting

Mr Florian Maderspacher, MPI Entwicklungsbiologie, Tubingen, won the prize for his poster on Leopard and Obelix control cell behaviour during formation of the adult pigmentation pattern in zebrafish.

Promega Young Scientist Award

The finals of this competition were also judged at the York Spring Meeting. The winner was Rut Carballido-Lopez, Sir William Dunn School of Pathology, Oxford, who was presented with a lovely glass model laboratory, complete with lab mice.

Biochemistry Society Medal Winners 2002

Professor Edwin Southern (Oxford)
Sir Frederick Gowland Hopkins Memorial Lecture for devising two of the most powerful and widely used methodologies employed in molecular biology and genetics: Southern blotting and oligonucleotide arrays (DNA chips).

Professor Tony Kouzarides (Cambridge)
The Wellcome Trust Award for Research in Biochemistry Related to Medicine for his work on the regulation of transcription by Fos and Jun. Significantly, his work on acetylases, deacetylases and methylases is leading to new targets for drugs against cancer. He has carried out collaborative studies to demonstrate that some of the genes encoding acetylases and deacetylases are altered in cancer and has developed high-throughput drug screens.

Dr Thomas Owen-Hughes (Dundee)
The Colworth Medal for his work on chromatin remodelling, which has redirected the focus of attention in the chromatin field. He has paved the way for a new understanding of how the organization of DNA *in vivo* in higher eukaryotic cells affects the control of gene expression.

Dr Michael Neuberger (Cambridge)
The Novartis Medal and Prize for his work defining the regulatory elements in the kappa chain locus that direct the mechanism of somatic hypermutation and gene rearrangement. He also provided novel approaches to humanizing antibodies for the treatment of disease.

Dr Bernard Dixon and Professor Steven Rose (Open University)
The Biochemical Society Award. This new award is for an outstanding contribution to Scientific Communication in the public domain. Both scientists have been in continuous publication for decades and played key roles in informing public debate and making biochemistry accessible.

Changes on the BSCB committee

Three new members have been elected to the Committee: Jordan Raff, Gillian Griffiths and Michael Way.

Jordan Raff studied Biochemistry as an undergraduate at Bristol University. He did his PhD with David Glover in the Department of Biochemistry at Imperial College London, where he first started to work on cell division in fruit flies. He has continued to work on this problem throughout his scientific career, first as a post-doctoral fellow with Bruce Alberts at the University of California, San Francisco, and then as a Wellcome Trust funded Senior Research Fellow at the Wellcome/Cancer Research UK Institute in Cambridge.

Gillian Griffiths obtained her PhD from the MRC Laboratory of Molecular Biology at the University of Cambridge, working with Cesar Milstein on somatic hypermutation. After a post-doctoral fellowship with Irv Weissman in Stanford, USA, she set up her own laboratory at the Basel Institute for Immunology. Gillian returned to the UK as a Wellcome Trust Senior Fellow, first at the MRC Laboratory of Molecular Cell Biology, University College London, and then at the Sir William Dunn School of Pathology, Oxford, in 1997.

Michael Way also did his PhD at the Laboratory of Molecular Biology in Cambridge, finishing in 1988. He then did post-docs at the MRC and the Whitehead Institute for Biomedical Sciences, MIT, Boston, USA. His first position as a Group leader came in 1995 at EMBL in Heidelberg. He joined the ICRF in 2001, where he runs the Cell Motility Laboratory.

Please note that any BSCB members can nominate themselves or fellow cell biologists for election to the committee. Each person should have a nominator and a seconder. We are looking for committee members who represent a good spread of interests and geographical location and who, above all, will make a positive contribution to the running of the BSCB. Nominations should be sent to the BSCB Secretary, Michael Whitaker, and are welcome throughout the year. Committee meetings are held at the Spring meeting, then once or twice more during the year.

Schools news: Biology books for children

Know Your Cells is a new series of children's books written by Fran Balkwill and illustrated by Mic Rolph. Once again, they use their unique brand of simple but scientifically accurate commentary and colourful graphics to take young readers on an entertaining exploration of the amazing hidden world of cells, proteins and DNA.

The series includes:

Enjoy Your Cells
Germ Zappers
Have a nice DNA
Gene Machines

Details may be found on www.cshlpress.co.uk

In brief

Professor Ray Dils

Sadly, Ray Dils passed away on the 24th March 2002 after a sudden but brief illness. Ray had just reached his 70th Birthday and had been a member of the BSCB for 20 years. As Professor in the department of Biochemistry and Physiology at the University of Reading he made significant contributions to our understanding of the development of the mammary gland. He will be sadly missed.

Wanted: speakers to talk in schools and colleges

The UKLSC is compiling a national database of University speakers willing to visit local schools and colleges to discuss their work and careers in biology. The database will be lodged on www.Biology4All.com and should be available by September 2002.

Anyone interested in participating should complete the questionnaire at *www.biochemistry.org/education/question*
Sign up and help spread the word on cell biology!

Correction

The cover picture on the BSCB Winter 2001 Newsletter was produced by Rob Wolthuis in Jon Pines's lab.

Funding for local meetings

The Society is prepared to provide limited financial support for meetings organized by any local interest group relevant to cell biology. Requests for funds should be sent to the Treasurer, Mark Marsh (address on page 29), accompanied by a report of a previous meeting, if such has already occurred

If a meeting receives such support, a report of the meeting will be required for publication in the Newsletter. The financial assistance should be acknowledged on the programme and at the meeting itself.

Quarterly Muscle Development Meeting, King's College London

At these quarterly meetings, which speakers present their work on aspects of cell and developmental biology of muscle tissue in health and disease. The meetings have proved extremely popular, attracting regular attendees from Edinburgh, Paris and many points between. Meetings commence at 6pm on Wednesday evenings in the impressive Gordon Museum on Guy's Campus of King's College London and are followed by pizza and drinks in the MRC Centre for Developmental Neurobiology courtesy of our sponsors: ICR, GSK, Improvision and BSDB. Attendance is free and accommodation can frequently be arranged with locals for those from out of town. E-mail simon.hughes@kcl.ac.uk to be added to the mailing list.

Cheaper journal subs for members

Did you know that BSCB members are entitled to discount subscriptions for several journals? The money saved more than compensates for your membership fee, so encourage your friends to join the Society. Details are on the inside back cover. This year the scheme includes *The Journal of Cell Biology*: members wishing to take advantage of this offer should go to *www.jcb.org/subscriptions/member.shtml*. Another new offer is for Traffic, published by Blackwell Science.

Biochemical Journal launches 'immediate publication'

From April 2002, papers submitted to the Biochemical Journal will be published online as soon as they are accepted. This new feature will ensure that the latest research is globally available and will provide maximum exposure for authors and their research. Visit: *www.BiochemJ.org*

The Hutchison/MRC Research Centre Cambridge

In the past few years, major leaps have been made in understanding what cancer is and how it develops. Now, as never before, there are great opportunities to exploit the knowledge gained from basic cancer research for the benefit of cancer patients. This is the explicit aim of the Hutchison/MRC Research Centre, a new institute in Cambridge with a multidisciplinary approach to the understanding and treatment of cancer.

Cristina Pelizon

The Hutchison /MRC Research Centre, which opened in July 2001, is the result of a collaboration between the Medical Research Council (MRC), Cancer Research UK and the University of Cambridge. It consists of two integrated components, the new MRC Cancer Cell Unit and programmes of the University of Cambridge Cancer Research UK Department of Oncology, managed by two joint Directors. These groups are located in a new four-storey building on the Addenbrooke's Hospital site.

The choice of the location is not fortuitous. The Addenbrooke's Hospital campus offers excellent opportunities for interaction with the major hospital of East Anglia and MRC institutes in the area (the MRC Laboratory of Molecular Biology and the MRC Centre for Protein Engineering are around the corner), as well as with the University of Cambridge and its academic Departments.

There are also several benefits of living in Cambridge. This historical city offers many cultural and social activities and it is a very pleasant place to live.

In the Centre, each of the two components has programmes in basic cell biology and genetics, and programmes in translational cancer research. These, however, are complementary and unified in the common objective of bringing research at the bench into clinical application by achieving better knowledge of the prevention, diagnosis and treatment of cancer.

So the atmosphere is vibrant and the Centre offers the opportunity of synergy among scientists and clinicians working on different aspects of cancer research ranging from the search for new cancer predisposing genes, through control of chromosome replication, DNA repair, genomic instability and molecular cytogenetics to karyotyping of cancer cells.

Ron Laskey, Director of the MRC Unit and group leader, says he is "very pleased with how the Centre is developing". However, he feels this is only the starting part of the pathway and, he continues, "we cannot rest now". He hopes that in the long run the Centre will succeed in translating basic research into diagnostic tests and drugs, as well as producing good basic science.

Ron Laskey's research focuses on two topics: how DNA replication is regulated in eukaryotic cells and how DNA replication proteins can be used as diagnostic markers of cancer. In collaboration with Nick Coleman, another group leader, his group has recently developed a cervical smear test based on the detection of replication proteins. In combination with the conventional Papanicolaou stain, this new test may be very useful to decrease the incidence of false

negatives. They feel the test has great potential and are working to extend this approach to other forms of cancer, including cancer of the colon and lung.

Talking to scientists in the building, the excitement of contributing to an innovative centre is tangible. Above all, people share a great feeling of being part of the same team aiming for an important goal. As a result of this, positive interactions and collaborations within the Centre happen spontaneously.

"There is a great diversity in the scientific and clinical backgrounds of people in the Centre, but being together in the same building creates bridges between our different ways of approaching problems in cancer research," says Ashok Venkitaraman, Deputy Director of the MRC Cancer Cell Unit and group leader, who is also a member of the University Department of Oncology. His group studies the mechanisms that preserve chromosome stability and how they can go wrong in inherited cancer syndromes. The Centre offers a unique opportunity to address these questions not only from a cell biology point of view but also from a clinical perspective. Ashok Venkitaraman is delighted with the design of the Hutchison: it is big enough to transcend the critical mass for interactions, yet individual groups are not too large, breaking down barriers in the communication flow. He is also happy about the recruitment policy, which emphasizes opportunities for young and enthusiastic people.

Paul Ko Ferrigno is one of them. He moved here from the USA, being attracted by the mix of clinical and basic research and the dynamic environment. His group, now containing four people, is developing peptide aptamer technology to characterise potential therapeutic targets in cancer. With the goal of identifying at least one active peptide in the next year, Paul Ko Ferrigno thinks that the interaction with clinicians in the building on an everyday basis is very important for his work. This interaction is strengthened by weekly seminars (the "chalk talks"), where more junior researchers have the opportunity to present their work, a departmental series for group leaders' talks and a very good external seminar series. He also likes the cross-lab and cross-floor attitude toward socializing, which is facilitated by the thoughtful

Above: The Hutchison/MRC Research Centre, a new institute in Cambridge, has a multidisciplinary approach to the understanding and treatment of cancer.

design of the building and the sharing of communal facilities and lab space.

There is indeed a very friendly atmosphere in the Centre. An important scientific and social event was the recent annual retreat, when scientists and administrative staff went together to the conference facilities at Newmarket Racecourse to discuss science and to get to know each other better. This is all part of producing a supportive and productive work environment and is very much appreciated by students and post-docs.

Gastroenterologist Rebecca Fitzgerald works on oesophageal cancer and the pre-cancerous condition known as Barrett's oesophagus. She has clinical duties and sees patients every week in addition to her work in the lab. Her research aims to identify people at risk of developing oesophageal adenocarcinoma, one of the fastest growing cancers in the western population. She likes the Centre and its international community and she finds that everyone makes a big effort to contribute to its success.

In addition to a strong scientific programme and lively scientists with great vision of how to help cancer patients, the Centre is well equipped and well funded too. State of the art facilities for cancer cell biology and genetic analysis are available and include a DNA sequencing facility, high throughput resources for molecular pathology,

cancer genomics, facilities for molecular cytogenetics and confocal microscopy, a facility for flow cytometric analysis and cell sorting and an IT core facility.

Anna Philpott is another group leader at the Hutchison who studies how cells stop dividing and differentiate during development, using *Xenopus* as a model system. This is an important area of research with strong implications for human cancer cells. Anna Philpott is also the Director of Graduate Affairs. She encourages students to apply for the PhD programme at the Hutchison because the Centre provides a well structured system for overseeing students. Graduate students register for their PhDs through the University of Cambridge and become members of one of the Colleges. The Centre is also committed to the training of clinicians. She concludes: "The Hutchison/MRC Research Centre is still very young, but I have a very good feeling about it".

The Centre's opening ceremony is due to take place on 18th May and after that, the next important event will be the Inaugural Symposium in October with speakers invited from all over the world.

Cristina Pelizon, PhD
MRC Cancer Cell Unit
Hutchison/MRC Research Centre

'Alternative' career paths for scientists
An interview with two journal editors

Many people are drawn to the world of scientific publishing: whether it's writing short articles for a newsletter, devising new and intriguing science text books or becoming Editor of a respected journal, former academic scientists often find this type of career extremely rewarding. Sharron Vass discusses the world of scientific publishing with Richard Sever and Theo Bloom.

Sharron Vaas

There seems to come a time in most people's scientific career when they ask the question, 'what's next'? This time appears to coincide with writing up a PhD thesis, coming to the end of post-doctoral funding, or facing the task of writing yet another grant proposal. The big dilemma is whether to stay at the bench or to move on to pastures new. These people have become highly qualified individuals with a very specialised skill set and the prospect of switching career may be extremely daunting, so what are the alternatives?

For those with an eye for detail and exceptional recall abilities, perhaps becoming a Patent Lawyer would prove lucrative, or if the wrangles of who owns what is more your thing, then you may wish to become an Intellectual Property Consultant. Owing to significant growth in the BioTech industry, individuals with these skills are in demand, as are those to fill Marketing, Business Development or Sales Representative positions. Of course, for the extremely computer literate there's Computational Biology or Bioinformatics, which provides a drier alternative to cutting-edge research.

Many people are drawn to the world of scientific publishing: whether it's writing short articles for a newsletter, devising new and intriguing science text books or becoming Editor of a respected journal, former academic scientists often find this type of career extremely rewarding.

To find out more, I contacted Richard Sever (Executive Editor, *Journal of Cell Science*) and Theo Bloom (Editor of *Genome Biology*, part of the Current Science Group) and asked what initially interested them in publishing.

Richard told me, "I always enjoyed giving talks, teaching undergraduates and chatting to people at meetings far more than life at the bench - where the pace was simply too slow. I distinctly remember reading a copy of TiBS and thinking 'that's what I want to do'". In answer to the same question Theo said, "I have always liked writing and presenting scientific ideas, and having an opportunity to read and discuss more ideas than arise in one lab was very appealing. I was lucky to know some people in publishing who I could talk to before applying for my first job, so I knew what it might involve".

I was also curious to know what a typical week was like for a journal editor. According to Richard, this depends on the journal: "the main thing is that one is always working on several issues of the journal. So I might be writing something for one issue, accepting an article for

another, reading the referees' reports for an article that will probably appear in a couple of months, and commissioning a review for later in the year".

When asked what aspect of the job she found most satisfying, Theo responded: "For me, many of the things I enjoy are similar to tasks within an academic job - the variety, and the opportunity to think and talk about science a lot. I enjoy training people too, and seeing projects through from before launch to maturity. But I don't have to apply for grants, and seldom have to worry about direct competitors or to plug away with areas that are going nowhere – I can simply focus on the best and most exciting research, and how best to present and deliver it to interested readers". Richard is most happy when he receives a revised manuscript in which all the requested revisions have been made. Both interviewees rated their overall job satisfaction at 8.5 out of 10 or higher, and seemed very positive about their current positions.

On a final note, I asked whether they had any advice for aspiring editors. Theo told me, "Don't think that editing journals or books is all (a) writing or (b) sitting around thinking deep thoughts about science. This is a job in the real world, where deadlines have to be met in a competitive business setting, and there are huge numbers of applicants for every job (so expect to start near the bottom of the ladder). But if you're more motivated by presenting and clarifying science than by digging away at one tiny aspect of it in the lab, this could be the job for you". Richard's advice was to "write or edit anything you can. Whatever level you try to enter publishing at, your application will stick out if there is something that suggests you really are interested in writing/editing and not simply tired of bench science".

This article is no way intended to lure scientists away from the bench, but it aims to offer an insight into the world of editing and perhaps provide some food for thought.

Above: Moving away from the lab bench to the world of scientific publishing presents new, but often enjoyable challenges.

Sharron Vass
Wellcome Trust Centre for Cell Biology,
University of Edinburgh

Book reviews

Principles of Cell Proliferation

John Heath

This slim volume introduces the mechanisms by which cells decide to replicate themselves. After introducing the cell cycle (albeit mainly the vertebrate tissue culture cell cycle), the author presents a series of essays concerning growth factors and their receptors, signalling pathways, gene expression and cell cycle control. Later chapters address the genesis of cancer by activation of oncogenes and mutation of tumour suppressor genes.

Clearly, to cover this vast subject area in only 130 pages is an ambitious task, yet the author makes a fair effort to distil out general principles and also to convey some of the experimental evidence for our current knowledge. Inevitably there are casualties; for example, mitosis and the developmental control of cell division are barely mentioned.

Perhaps for simplicity, the author sticks mainly to discussion of classic experiments, such as the identification of MPF/cdc2 in the cell cycle chapter or the Rb/E2F pathway of tumour suppression, and tends to avoid areas of uncertainty or novelty. Where recent results are discussed, for example microarray data of growth factor-induced gene expression, the technology behind this (and its potential for the molecular classification of tumours) is glossed over completely.

This book is suitable as a basic introduction for a target audience of biology and medical students or newcomers to the cell proliferation field. It is enthusiastically written and short enough to be read in a single sitting, which are good points, but the bibliography is poor and anyone interested in pursuing a topic in more detail would feel left high and dry. Also, now that there is so much data on cell signalling, protein kinases, etc., on the Internet it would have been helpful to provide links to useful websites.

Richard Adams, Chromosome Structure Group, ICMB, University of Edinburgh

Gene Transcription: mechanisms and control

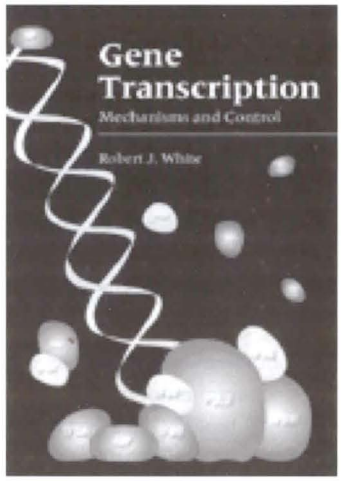
Robert White

The book's introduction provides a worthy overview of gene expression and subsequently explores the complex mechanisms of the topic. In stand-alone chapters, the author primarily focuses upon the agents of transcription – the polymerases – and thence the transcription factors themselves, namely their production, DNA recognition, association with chromatin, localization and activity and finally their role in development. In addition, the author highlights the role of the cell cycle and other nuclear processes in the regulation of transcription.

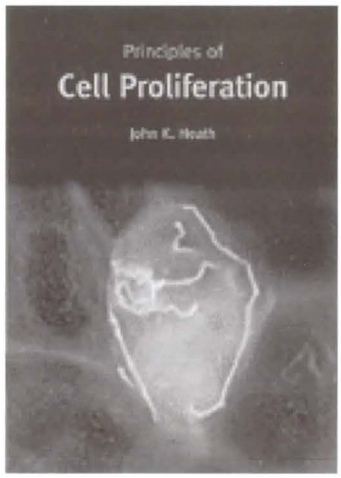
In general, the principles are explained with selected examples often linked to human disease. The book is simply but well illustrated and in many cases gives a brief explanation of the experimental approaches taken in discovering the mechanisms behind gene transcription.

Aimed at non-experts from scientific undergraduates to postgraduates, and research scientists needing a current perspective of the field, this book succeeds in bringing the ever more complicated area of gene transcription to its target audience.

Frances Henshaw
Queen Mary, University of London, Clinical Research Building, London



Gene Transcription: mechanisms and control
Robert White, Blackwell Science
0632048883
288pp, 2000



Principles of cell proliferation
John Heath, Blackwell Science
0632048867
152pp, 2001

Essential Developmental Biology

Jonathan Slack

This is a textbook that I wish I'd had as an undergraduate. Jonathan Slack has produced a truly useful text on developmental biology, in which all the contributory elements are effortlessly integrated. No one area is over-emphasised; for example, cell biology and genetics share equal space with embryology, which often tends to dominate a book on this subject.

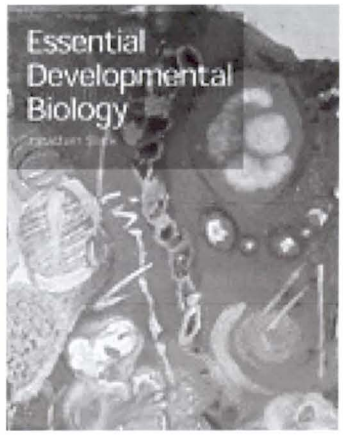
The first chapter is entitled 'The excitement of developmental biology' and this sets the tone for the rest of the book. Thereafter, Slack manages to maintain the reader's interest by conveying his own obvious fascination for this branch of science.

The book includes three key chapters on 'Experimental embryology', 'Techniques in developmental biology' and 'Model organisms', which pull the whole story together by answering the inquisitive student's questions, such as "how did they discover that?", in a succinct manner.

Copious illustrations complement the text very well, although all are line drawings and the book might have benefitted from the extra expense of including a few photographs, such as those which beautifully illuminate the cover. However, a noted bonus from the teaching point of view is that all the book's figures are freely available for download on Blackwell's website.

Slack has the gift of summarising in a very concise manner without leaving the reader with the impression that the text is 'missing' something. This gives the book a feeling of completeness not often found in similar 'Introduction to...' or 'Essential...' texts. At the same time, Slack acknowledges that this book is only the beginning and each chapter therefore concludes with a selection of key papers and books for further reading. The end result is a value-for-money, slimline paperback that will enlighten, stimulate and motivate.

'Essential Developmental Biology' will genuinely help students to understand a complex area of science and deserves to be widely adopted as a set text.



Essential Developmental Biology,
Jonathan Slack, Blackwell Science
0632052333
328 pp, 2001

Gareth Cuttle, Department of Physiological Sciences, Universidade Federal de Santa Catarina, Florianópolis, Brazil

Books for review

If you have enjoyed reading the above reviews, why not write one yourself? Choose one from the selection listed below. Alternatively, if there is a book you would like to review that is not included here, contact me (jmarsh@wiley.co.uk) and I will request a review copy from the publisher.

Anyone interested in reviewing any of the following should contact Andy Furley (a.j.furley@sheffield.ac.uk)

Genes & Signals
Ptashne and Gann, Cold Spring Harbor Press

Molecular Biology of the Cell, 4th Edition
Alberts et al, Garland

Molecular Biology of the Cell, 4th Edition, A Problems Approach *Wilson & Hunt, Garland*

Embryonic Stem Cells: Methods and Protocols
Turksen, Humana Press

Genomic Imprinting: Methods and Protocols
Ward, Humana Press

Mouse Development
Rossant & Tam, Harcourt Press

Molecular Principles of Animal Development
Martinez-Arias, Oxford University Press

Beyond Heterochrony: The Evolution of Development
Zelditch, Wiley

Colberts Evolution of the Vertebrates: A History of the Backboned Animals Through Time, 5th Edition
Colbert, Morales & Minkoff, Wiley

Evolutionary Developmental Biology of the Cerebral Cortex *Novartis Foundation Symposium, Wiley*

Reproductive Biology of Invertebrates, Volume 7, Progress in Developmental Biology *J R Collier, Wiley*

Reproductive Biology of Invertebrates, Volume 8, Progress in Developmental Biology *T S Adams, Wiley*

Reproductive Biology of Invertebrates, Volume 10, Part B, Progress in Developmental Endocrinology *K G Adiyodi, Rita G Adiyodi, August Dorn, Wiley*

For these, contact Joan Marsh (jmarsh@wiley.co.uk)

Biosciences on the Internet
Georges Dussart, Wiley

From DNA to Diversity
Sean Carroll, Jennifer Grenier, Scott Weatherbee
Blackwell Science

GenComics
Hanno Bolz, Wiley

The ASCB in downtown DC

Bound for Washington DC, I was very excited about the prospect of what lay ahead. I had been fortunate to win the 'Young Cell Biologist of the Year Award' at last year's Spring Meeting of the BSCB, with a trip to the 41st American Society for Cell Biology Annual Meeting, from 8-12 December 2001.

The Brighton conference had been my first and the American one was on quite a different scale. Some fellow PhD students from my lab, Ida Lister, Rhys Roberts and Neil Cook, were also at the conference and it was very enjoyable to share the experience with them. The meeting was held in the Washington Convention Centre which, despite being an enormous concrete monstrosity, was very suitable to accommodate the few thousand conference delegates. A short colourful walk from our hotel through Chinatown each morning took us to the Centre.

The Keynote Symposium looked to the future and the speakers, including Craig Venter, academics from Princeton and Stanford, and a politician, discussed genomics, stem cells and functional approaches to cell biology in the new century. Each day there were talks at 8am. Coffee breaks are well remembered for the mountains of cookies. These morning talks covered a wide range of topics from genotype/phenotype plasticity in cancer to membrane trafficking and the cell biology of sensation. Each afternoon there were eight parallel minisymposia; we had to be very selective, and choose the one which most appealed. I enjoyed hearing about research in my field in the talks on cell motility, cytoskeleton and cell junctions, and endocytosis. Throughout the meeting there were also several other sessions addressing issues like bioterrism, women in science and funding problems.

The vastness of the poster hall was initially quite daunting. There were endless rows of posters and company stands, but once you learnt to navigate between the sales reps handing out bouncing balls and enthusiastic people beckoning to you by their posters, it all became much more manageable. Our poster session was on the last day. It was very useful to talk to lots of people about Myosin VI and the Golgi complex, and receive some helpful suggestions. Also interesting was the chance to match faces to names I knew from papers.

Although the conference itself was action-packed from dawn until late in the evening, there were still opportunities to visit some of the impressive Presidential monuments and fascinating Smithsonian museums. Early one morning I explored Rock Creek Park on the conference Carl Zeiss 10km road run, and we spent a pleasant evening at the social event at the Corcoran Art Gallery.

The entire trip was both very interesting and enjoyable.

Claire Warner,
University of Cambridge

Above and below: Claire Warner and Neil Cook explore Washington DC

BSCB Spring Meeting
Cell regulation through molecular machines
21–23 March 2002, York

This Spring Meeting was another successful occasion. This year, the Society and the British Society for Developmental Biology joined forces with the Genetics Society and there was an excellent turnout. Highlights are featured below. My thanks to those who contributed and my apologies to those whose presentations we were unable to cover.

Nuclear Structure and Function

This session, chaired by Angus Lamond (Dundee), highlighted our increasing understanding of the relevance of compartmentalization within the nucleus.

Wendy Bickmore (Edinburgh) began by raising the question of whether DNA is spatially organized, presenting evidence that gene-rich chromosomes are located near the centre of the nucleus and gene-poor chromosomes at the periphery (known to be a site of gene suppression in other systems). Some gene-dense regions are found outside their chromosome territory, raising the possibility that they are recruited to the centre of the nucleus. This radial organization was also observed when GFP was incorporated at specific loci, and time-lapse imaging revealed that chromosomes were relatively static, with those located at the periphery, perinucleolar and nucleolar regions having the most constrained movement.

Roel van Driel (Amsterdam, The Netherlands) continued this thread later in the session by presenting data from a GFP-histone H2B cell line in which transcriptionally active sites were labelled. Transcription is found exclusively in the perichromatin compartment, while epigenetically silenced genes are found near centromeric heterochromatin and in complex with gene-repressing polycomb group (PCG) proteins. PCG proteins are also found in the perichromatin region where active genes are located, suggesting that silenced genes are interspersed with active genes. Quantitation of chromosome decondensation at the end of mitosis revealed a limited unfolding of bulk chromatin in interphase cells, although some regions can unfold more than others. The question raised for future sessions is whether structural organization of chromatin is a direct or indirect result of gene expression.

Our knowledge of ribosome assembly was brought up to date by **David Tollervey** (Edinburgh), who showed how proteomic approaches are systematically uncovering these highly dynamic pathways. Regarding spatial organization, proteins found in the 90S precursor localise to the dense fibrillar centre of the nucleolus, while many late factors are found in the granular compartment where 90S is cleaved to form

the 60S and 40S precursors. Of the many proteins found in the 90S subunit, most participate in 40S processing and are never found in the 60S particles. Importantly, the 60S and 40S subunits are assembled via distinct pathways. The multiple and dynamic steps involved in the 60S pathway were outlined here, and similar approaches will be used to define the 40S pathway.

Moving on to splicing, **Judith Sleeman** (Dundee) introduced the importance of the SMN complex in Cajal bodies and snRNP processing. Although coilin and SMN are often found in similar locations and appear to play roles in similar pathways, they show very different properties. SMN is relatively static in Cajal bodies, while coilin turns over rapidly, and the two proteins show different localization patterns throughout mitosis.

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Greg Matera (Ohio, USA) went into more detail concerning the interaction of SMN with coilin. Using cells from coilin knockout mice as a background, various truncation mutants were created by transfection to identify the region of coilin necessary for recruiting SMN to Cajal bodies. This region is an RG motif, similar to that found in Sm proteins with which SMN also interacts. The interaction of SMN with coilin requires arginine methylation and is repressed when methylation is inhibited. Interestingly, arginine methyltransferases are less efficient in cells with separate Cajal bodies and Gems, suggesting a model in which methylated coilin recruits SMN to Cajal bodies.

Export of mRNA was discussed briefly by **Richard Grant** (Cambridge). The C-terminus of the nuclear pore protein TAP, known to mediate mRNA nuclear export, was shown to interact with FG repeats in nucleoporins. NMR and crystallography reveal a similar structure, and support evidence from chemical shift ligand binding assays that a conformational change takes place when TAP binds these FG regions. This interaction is similar to that observed between importin-beta and nucleoporins.

Lipid Rafts

Lipid rafts are microdomains enriched in sphingolipids and cholesterol that have been proposed to exist in the plasma membrane. Their biochemical definition is that they are resistant to detergents such as 1% Triton, owing to the tight packing of their lipid acyl side chains which display an unusually high melting temperature. After Triton extraction, lipids rafts float to the top of a sucrose gradient. They contain a specific set of proteins, of which GPI-anchored proteins and caveolin are the best documented examples. The questions that emanated from the session related to their size, their number, their role and their lipid/protein organisation (and even their existence!).

Kai Simons (Dresden, Germany) has used photonic force microscopy to measure the size of lipid rafts. By comparing the drag force of raft proteins (such as a GPI-anchored protein) and non-raft proteins (such as transferrin receptor) in the presence or the absence of cholesterol, he estimated the diameter of a single raft to be 25±10 nm. The conclusion is that each raft is very small and contains a very small subset of proteins, leading to the prediction that in order to act as signalling and/or sorting devices, they need to cluster. The next three lectures illustrated this concept.

What is the role of rafts *in vivo*? Kai Simons suggested that in yeast, rafts in which cholesterol is replaced by ergosterol could have a role in mating. Upon pheromone treatment, yeast cells project an elongated tip enriched in the Fus1p protein that is involved in cell fusion during mating. These tips are argued to be ergosterol/sphingolipid-rich lipid rafts containing a specific set of proteins. In mutants that fail to synthesise ergosterol or sphingolipids, most of the Fus1p is no longer localised in the tip. As a consequence, mating is impaired. Not all lipids rafts are in the tips; others are located elsewhere and contain a different set of proteins. The question then arose of how proteins know to which rafts they belong.

Roger Morris (London) presented a neurone labelled for a GPI anchored protein that covered

the neurone in many small clusters thought to be lipid rafts. Rafts seem to represent an important means of transmitting information across the plasma membrane. He discussed the association of two different proteins with the sphingolipid/cholesterol rich rafts. Thy-1, a raft protein, downregulates the activity of the diacylated intracellular kinases, Fyn, Lck and Lyn, across the plasma membrane which these kinases do not span.

Eduard Babiychuk (Liverpool) addressed raft function in smooth muscle. Raft oligomerisation is mediated by Ca^{2+}-dependent binding of annexin 2 to the plasma membrane and he argued that this oligomerisation is crucial for smooth muscle function. Contractions are abolished by a truncated form of annexin 2 that cannot bind the plasma membrane and therefore stabilise rafts. Artificially raising the level of cholesterol rescued contractions, arguing for a role of rafts in mediating signalling.

Tony Magee (London), who chaired the session, discussed his visualisation of lipid rafts in T cells after crosslinking with cholera toxin and cholera toxin antibodies, a process he called 'raft patching'. Upon this patching, lipid rafts were found to be enriched in Lck and T cell receptor (TCR), but the transferrin receptor and CD45 tyrosine phosphatase were excluded. The crosslinking also induced tyrosine phosphorylation of TCR and increased downstream signalling. Depletion of cholesterol inhibits TCR signalling, suggesting that TCR engagement triggers lipid raft aggregation *in vivo* and that recruitment of TCR and kinases into the rafts causes signalling. Similar raft clustering is seen at the interface between a T cell and a macrophage, the so-called immunological synapse.

Finishing the session, **Deborah Brown** (Stony Brook, USA) described her views on the organisation of lipids and proteins in rafts. Fatty acylation clearly anchors proteins to rafts but it is not the whole answer. Caveolin, a major component of caveolae rafts, has three palmitoylation sites but they are not essential for localisation. What other mechanisms are involved? Caveolin is a 28 kDa protein with the N and C termini in the cytosol. The 33 amino acid hydrophobic stretch is too short to allow conventional spanning of the membrane. Attempts to introduce mutations in caveolin and thereafter assess its association with rafts have been impaired by the fact that any amino acid changes cause caveolin to remain stuck in the Golgi apparatus for reasons still unclear. They no longer contribute to rafts, but rafts are still found at the plasma membrane, showing that caveolin is not an integral part of raft biogenesis.

Reconstitution of rafts *in vitro*, in addition to different forms of recombinant caveolin is clearly the way forward. Preliminary experiments look very promising. Wild-type caveolin associated with detergent-insoluble membranes generated with raft lipids but not those generated with non-raft lipids.

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Ubiquitin and Proteasomes

A key role for the ubiquitin-proteasome pathway is in the control of transcription factors in processes such as the survival response and apoptosis. **Ronald Hay** (St Andrews) presented work on how the regulation of the transcription factor NF-κb, by its inhibitory molecule IκB, is controlled by key ubiquitin-conjugating enzymes (type E2 enzymes), Ubc5 and Ubc3 (cdc34). A variety of techniques were used to characterise this pathway, such as inhibition using siRNA and the use of an NF-κb reporter cell line. Using a similar approach, key insights were gained into how adenoviruses alter particular points in the ubiquitin-proteasome signalling processes to disrupt NF-κb and p53 responses in infected cells.

How specific ubiquitin ligases (type E3 enzymes) interact with their target E2 enzymes in the ubiquitin pathway was discussed by **Phil Robinson** (Leeds). This was in order to address the problem of how individual cellular proteins are selected for ubiquitination out of a large cellular protein pool. Phil described how, using a yeast two hybrid screen, proteins interacting with the human E2 UbcH7, HHARI and H7-AP1, were identified and characterised. These proteins shared a common structural motif of at least one RING finger domain. This structure is found amongst the majority of E3 enzymes, and is very important for binding activity.

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The role of the ubiquitin-proteasome pathway in neurodegenerative disease was the topic of discussion for two of the presentations. A common feature of these diseases is the accumulation of protein plaques which appear to be proteasome substrates. **Robert Layfield** (Nottingham) has examined a class of such proteins, alpha-synuclein (involved in Parkinson's) and tau protein (Alzheimer's) which belong to the family of native unfolded proteins. Using recombinant tau and alpha-synuclein in *in vitro* assays with proteasome components, it was shown that these proteins don't require ubiquitination and unfolding before degradation by the 20S subunit. Thus proteasome inhibition could lead directly to symptoms in these diseases.

Ron Kopito (Stanford) posed two questions regarding neurodenerative disease: what is protein aggregation and what is its relation to neurodegeneration. In the case of Lou Gehrig's disease, *SOD1* mutation does not lead to loss of function but rather affects protein stability. The aggregation apparent in diseased cells appears to be due to an MT-mediated accumulation of protein around MTOCs. A hypothesis was put forward that the presence of the aggregates themselves inhibited the ubiquitin-proteasome pathway and thus cell viability. This was substantiated by the observed effect on a fluorescent assay for proteasome-mediated degradation in cells expressing pathogenic beta-amyloid protein.

Work was also presented that looked at the role of the ubiquitin-proteasome pathway in antigen presentation. **Aaron Hearn** (Bristol) described a method of characterising the pathway leading to the presentation of enterotoxin-derived peptides by the introduction of fusion peptides of various lengths into dendritic cells. Finally, **Wolfgang Baumeister** (Max-Plank Institute for Biochemistry, Martinsreid) explained how novel insights are being gained into the functions of the 19S subunit of the proteasome by examining the different morphologies of ice embedded 26S structures isolated from *Drosophila* using electron microscope single particle analysis. Of great interest was the application of electron tomography to examine 26S structures *in situ* within cells, thus potentially avoiding the generation of structural artefacts due to the physical isolation of such protein complexes.

Organelle Partitioning during Cell Division

Steve Taylor (Manchester) opened the session on organelle partitioning during cell division by introducing the spindle checkpoint, the process responsible for delaying anaphase until all kinetochores are attached to the mitotic spindle. He described research in his lab using ZM44739, a selective Aurora A and Aurora B protein kinase inhibitor developed by Astra Zeneca. This compound causes the inhibition of BubR1 phosphorylation and disrupts kinetochore-microtubule interactions causing failure of chromosome bi-orientation, only when microtubules are present. Genetic interference of BubR1 with dsRNAi also appeared to be compromising the spindle checkpoint. Steve concluded that Aurora kinase activity induced by lack of tension promotes chromosome alignment by regulating BubR1 function.

Paul Andrews (Dundee) gave a short talk on the importance of Aurora B in chromosome segregation and cytokinesis. He used time-lapse imaging of Aurora B-GFP during the cell cycle to show that Aurora B lies in the inner centromeric region until anaphase when it delocalises to the midzone and cell cortex. He saw that the actin inhibitor latrunculin A disrupted the cortical localisation whilst a myosin poison caused premature cortical localisation. Paul concluded that the actin cytoskeleton may play a role in the localisation of Aurora B during mitosis.

Greg Somers (Adelaide, Australia), spoke about the role of the Rho family of GTPases in cytokinesis. Pebble, a positive regulator of RhoA GTPase, helps to initiate cytokinesis. DRacGAP was shown to interact with Pebble. dsRNAi for DRacGAP produced multinucleation and defective cytokinesis. Greg suggested that a Pebble-DRacGAP complex might modify the actin cytoskeleton to promote cytokinesis by coupling the RhoA and Rac pathways.

Michel Bornens (CNRS, Paris) gave a thought-provoking lecture on the importance of the

centrosome-microtubule system in cytokinesis. He described recent work suggesting that microtubule-dependent movement of the mother centriole to the midbody precedes abscission and that this movement may be involved in the initiation of the next cell cycle. He concluded that this mechanism may help cells to integrate spatial controls with the decision to undergo cytokinesis.

From cytokinesis, the subject turned to the Golgi apparatus. **Michel Bornens** introduced GMAP210, a protein that binds to the Golgi and microtubules, which aids the clustering of the Golgi around the pericentriolar material and assists in its partitioning at mitosis. **Graham Warren** (Yale, USA) then gave a fascinating talk, in which he described work that reinforced the idea of a Golgi matrix acting as a scaffold for the enzyme-containing membranes. The components of the matrix include Golgins, a family of proteins that tether vesicles to the membranes. He radically proposed that the Golgi apparatus might comprise a paired structure similar to the centrosome. His lab has observed the duplication of the single Golgi stack in *Toxoplasma gondii*, a primitive eukaryote that infects mammalian cells. Time-lapse fluorescence imaging of a Golgi marker protein suggested that a paired Golgi can grow and divide in the absence of Golgi membranes and can partition in mitosis independently of the endoplasmic reticulum.

Kip Sluder (Massachusetts, USA) introduced the final talk of the session by considering whether centrosome defects contribute to the aneuploid state of many human cancers. He has used cellular microsurgery to investigate the role of the centrosome in cell cycle progression. After separation of the nucleus and centrosomes of cells in S phase, the karyoplasts lacking centrosomes underwent one extended mitosis, but never reached a second mitosis, instead arresting in early G1 prior to DNA replication. The cells formed a microtubule nucleating structure, which lacked centrioles. Kip suggested that there is a direct role for centrosomal structures in cell cycle progression, raising the possibility that a checkpoint monitors centrosomal structure or that the centrosome is positively required for G1 to S phase progression.

Cell Cycle

John Diffley (South Mimms) began this session by giving evidence that the DNA damage checkpoint not only inhibits cell cycle progression to allow DNA repair to take place in G1 and G2 but also regulates replication origin and replication fork activity to allow repair in S phase. His work shows that an activated checkpoint in addition to cell cycle arrest stabilises replication forks. These stalled replication forks activate a Mec1/Rad53 checkpoint, which then blocks late origin firing as well as initiation of mitosis. Mec1 may also stabilise replication forks by recruiting DNA repair complexes. He concluded that replication forks play a central role in sensing DNA alkylation and this sort of damage may therefore only be recognised in S phase.

David Lydall (Manchester) also discussed the DNA damage checkpoint. His work is focused on understanding how DNA damage is recognised by checkpoint pathways, more specifically looking at why telomeres, which have free double-stranded ends of DNA, do not activate this checkpoint. His work shows that specific proteins bind and protect telomeres. Such proteins include KU heterodimers, which if deleted cause cell cycle arrest via activation of the checkpoint by Rad9, Chk1 and Mec1. This information is being incorporated into a model of how checkpoint repair proteins avoid responding to telomere ends.

Karen Oegema (Dresden, Germany) studies centrosome dynamics in *C. elegans* embryos. She elegantly described how dsRNAi can be used to deplete one-cell stage embryos of genes implicated in centrosome function. The first target was *DCD1*, a novel gene, which when depleted caused loss of the pericentriolar material, suggesting a function as a structural component of the centrosome. The second target gene, *Air1* (a homologue of *Aurora A*), when depleted caused loss of γ-tubulin recruitment and consequently reduced microtubule nucleation. To conclude, Karen suggested a novel role for Aurora A in microtubule-independent recruitment of proteins to the pericentriolar material in mitotic cells.

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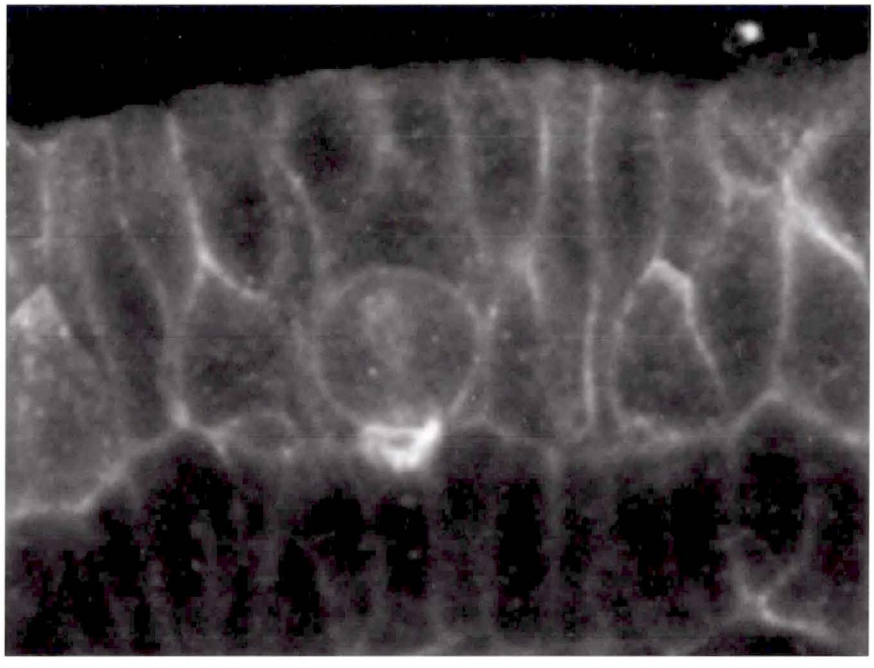
JY Huang (Cambridge) began by introducing the APC/C and discussing its involvement in centrosome-initiated cyclin B destruction. By using a dsRNAi approach to deplete the core APC/C subunits cdc16 and cdc27, he has shown that loss of each subunit leads to biochemically and morphologically distinct states of mitotic arrest. He suggested that multiple APC/C complexes might exist in cells that exhibit different localisation, timing and substrate specificity throughout the cell.

Continuing in the same vein, **Jan Michael Peters** (Vienna, Austria) gave an interesting talk on APC/C-mediated initiation of anaphase, looking at the regulation of cohesin, the protein complex that holds sister chromatids together. His work suggests that there are two steps in cohesin removal. Firstly, removal of cohesin from chromatid arms requires phosphorylation of the Scc1 subunit of cohesin by polo kinase. Secondly, to remove it from the centromeric region, Scc1 is cleaved by separase, thus allowing segregation of sister chromatids. However, when candidate cell lines expressing non-cleavable Scc1 were created, it appeared that centromeres still separated, whilst the arms did not! We clearly still do not have a complete understanding of how sister chromatid separation is regulated in mammalian cells.

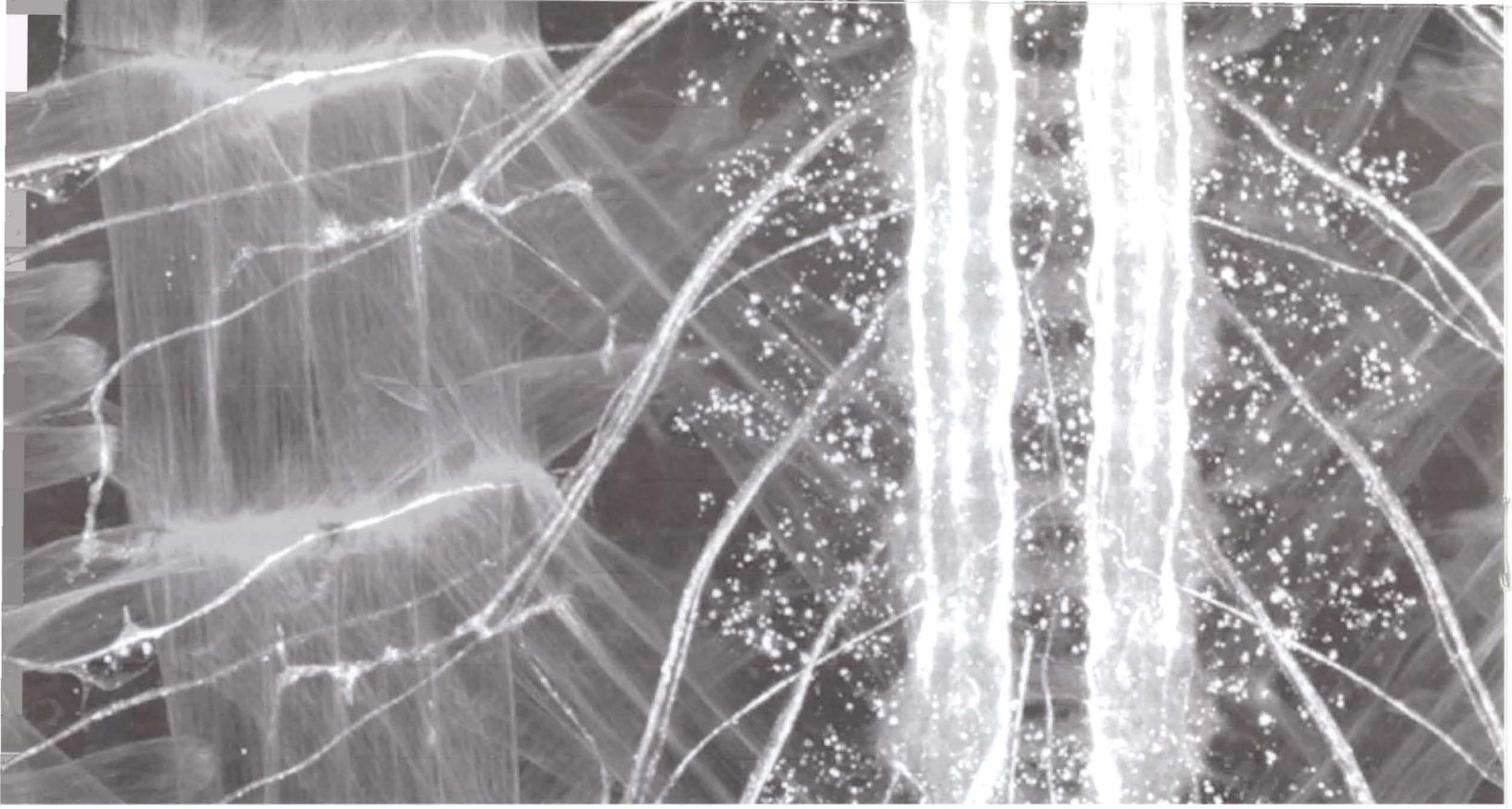
Ray Deshaies (Pasadena, USA) continued the degradation theme by giving a fascinating talk on the regulation of proteosome-mediated degradation. His lab studied the Cop9/signalosome, whose function is to cleave or 'deneddylate' the ubiquitin-like molecule Nedd8 from the Cul1 subunit of the SCF. He identified the JAMM domain within the CSNS/JAB1 subunit of the signalosome which has metalloproteinase activity. This is responsible for the deneddylation of Cul1 and is ultimately required to sustain optimal SCF activity. The Rpn11 subunit of the proteosome also contains one of these JAMM domains, which if mutated inhibits substrate turnover. This subunit, in the lid of the proteosome, is thought to chop the ubiquitin chain off the targeted protein so that it can enter the proteosome cylinder and be destroyed. To finish, Ray stressed the importance of deubiquitylation for protein degradation and the implications of this, for example, as a chemotherapeutic target.

Hooke Medal Lecture Andrea Brand

This year's Hooke Medal was awarded to Andrea Brand, a Wellcome Senior Research Fellow from the Wellcome Trust/Cancer Research UK Institute of Cancer and Developmental Biology. At the BSCB Spring meeting Michael Whittaker presented Andrea with the medal and she gave an inspiring lecture detailing her recent studies of the *Drosophila* embryonic CNS.



During the development of its nervous system the embryo produces many millions of cells whose fates and ultimate roles are strictly defined. Andrea and her lab have been uncovering some of the molecular mechanisms used by the *Drosophila* embryo to generate such cellular diversity. Asymmetric localisation of specific proteins in precursor cells appears to be a key strategy utilised by the embryo to determine cell fate and create diversity. Andrea first described her investigations into the localisation of Prospero, a homeodomain



protein which appears to act as a fate determinant in the early fly CNS. During fly neurogenesis a neuronal precusor cell, the neuroblast, undergoes asymmetric division, producing a further neuroblast and a much smaller daughter cell called a ganglion mother cell (GMC). Andrea described how both Prospero mRNA and protein localise to the basal surface of neuroblasts prior to their division, resulting in segregation of Prospero to only the basal daughter cell, the GMC. Prospero then appears to act in the GMCs to block stem cell division and allow differentiation.

A yeast two-hybrid screen to find Prospero binding partners pulled out Miranda, a protein which anchors Prospero to the cell membrane and is segregated, along with Prospero, to the basal cortex of the neuroblast. Miranda undergoes a dynamic relocalisation from the apical to the basal plasma membrane of the neuroblast, an aspect which Andrea illustrated beautifully with live imaging. Investigations of what might be driving this relocalisation revealed that the distribution of Zipper (*Drosophila* non-muscle myosin) follows Miranda to the basal cortex but the two never colocalise, suggesting that Miranda is pushed rather than carried to its new location.

In the remainder of her talk Andrea described some of the new work currently being pursued in her lab including a nifty screen designed to pull out novel asymmetrically localised proteins. Andrea's group are using Gateway cloning, a simple cloning method established by Invitrogen in which neither restriction enzymes nor ligase are required. Using this technology they construct vectors which produce, under the control of a GAL4 promoter, fluorescently tagged protein. For each candidate two complementary vectors are made and co-injected into GAL-4 expressing embryos: one produces the protein labelled with GFP at the N-terminus and the other with GFP at the C-terminus. The localisation of the labelled proteins is then assayed both for asymmetry in the neuroblast and also for colocalisation between the two differently labelled forms. This latter criterion cleverly checks that the GFP is not interfering with the localisation of the protein and consequently that this is likely to be the true localisation pattern of the candidate. I was certainly convinced that this is a superb strategy to quickly gain live localisation data for your favourite fly protein – or even your favourite hundred!

This prize talk was a refreshing mix of fascinating scientific questions and pioneering technical advances. From the applause it was clear that the audience felt the Hooke committee had made a great choice in awarding their medal to Andrea.

Previous page and above: In her Hooke Medal lecture, Andrea Brand used beautiful images and movies to illustrate how the *Drosophila* embryo builds its nervous system.

The second international fission yeast meeting in Kyoto

Delegates to the conference were greeted by the earliest cherry blossoms in 50 years, a true sign of Japanese hospitality!

Teresa Niccoli

The meeting was opened by this year's British Nobel Prize winners, Paul Nurse and Tim Hunt, together with Tony Hunter. Paul Nurse delivered his Nobel Lecture, describing the identification of the cdc proteins, major regulators of the cell cycle, which are conserved from yeast to mammals. Tim Hunt described his eureka moment: the identification of proteins whose levels fluctuated during the cell cycle, the cyclins, which constitute a cell cycle clock. Tony Hunter gave us an account of his laboratory's recent work on the characterisation of the *Schizosaccharomyces pombe* homologue of human survivin, Bir1, a nuclear and spindle protein required for cytokinesis and for the appropriate localisation of Aurora kinase.

The meeting proper began the next day, with a very full schedule: 84 plenary talks in five days plus three workshops which covered all the different aspects of *S. pombe* research, from checkpoints, to cell cycle, mitosis, meiosis and mating, transcription, signalling, genomics and morphogenesis. A truly comprehensive overview of how *pombe* research has expanded and developed in recent years.

Traditionally, the fission yeast has been used to study the regulation of the cell cycle and DNA replication. Many talks addressed these topics. New functions have been identified for 'old' players and new techniques have allowed the analysis of old functions in more detail. CHIP technology and improved biochemistry have facilitated a more thorough characterisation of replication origins, which look increasingly less like those in *Saccharomyces cerevisiae* and more like metazoan ones, thus making *S. pombe* a good model system to study replication initiation.

The completion of the sequence of the fission yeast genome has already shot the *pombe* world into the post-genomic era: facilities for functional genomics are being established, which will be available to the whole community and microarrays have been developed for whole genome expression profiling. All the ORFs in the genome are being deleted, and they are being placed in Gateway vectors and fused to GFP to create a database of protein localisation. All these resources will allow more global approaches to fission yeast research.

Over 200 posters were presented, giving researchers the opportunity to discuss their work, share their views and initiate collaborations. Everybody agreed that the quality of the work was very high.

But it was not all science, we got an opportunity to sample authentic Japanese lunches in traditional wooden bento boxes and the final banquet was accompanied by a typical Japanese sketch performed by the long lost 'twin brother' of Professor Hiraoka, a unique display of true Japanese humour!

Teresa Niccoli
Cancer Research UK

BSCB Autumn Meeting

5th Abercrombie Meeting on Cell Behaviour

St Catherine's College, Oxford

15–18 September, 2002

Michael Abercrombie was a pioneer in the field of cell behaviour - 'the pioneer ethologist of cells'. The first Abercrombie meeting was organised in honour of his contribution to the field. There have now been four meetings and the fifth, which will also be the Autumn meeting for the BSCB, will be held this year at St Catherine's College, Oxford.

The meeting organisers are Dr Anne Ridley, Dr Peter Clark and Dr Michelle Peckham.

Registration

Full details of how to register can be found at www.bscb.org

Please select the relevant fee for yourself. Please note that if you complete this form after 30 June 2002 your registration will be processed at the higher rate shown.

Attendee type	Early-bird rate *(up to 30/6/02)*	Pre-conference rate *(from 1/7/02)*
Member	£380	£420
Non-member	£400	£450
Student members	£350	£400
(1st author poster presenters only)		
Day delegate	£60 per day (£30 Wed)	£60 per day (£30 Wed)

Accommodation

Accommodation on Sunday, Monday and Tuesday nights is included in the fee for Full Participants. Accommodation is held in standard student rooms but a very limited number of en-suite rooms are available to delegates on a 'first come, first served' basis at a supplement of £50.

Bursaries

The British Society for Cell Biology has bursaries available for Student Members to cover a substantial proportion of the meeting costs. You will find a link at the end of this form to the society's grant application page. Bursaries will be awarded on a 'first come, first served' basis. Please note that to reach the link you must fully complete the registration form and submit your application.

Submission of abstracts

Deadline for receipt of abstracts: 1 July, 2002.

St. Catherine's College, Oxford

St. Catherine's College was founded in 1962 by Alan Bullock (Lord Bullock), although it has its origins in a non-collegiate Society which was established in 1868 as a means for the less well-off to study at Oxford.

While taking much from the best traditions of Oxford it succeeds in having a much less formal and more relaxed and friendly atmosphere than many other colleges. Designed by Danish architect Arne Jacobsen, the College has a traditional layout in quadrangle style with gardens. Its situation and architecture give a feeling of space and light and peace; it backs on to Merton's playing fields and the University Parks.

As well as the usual College facilities, St. Catherine's has three lecture theatres (two of which can also be used for drama and film), seminar rooms, a music house, two student computer rooms, a gym, squash and tennis courts, a punt house and among the most spacious common rooms in Oxford.

The purpose-built conference facility has a lecture theatre, meeting rooms and bar, and car parking.

Preliminary Programme

Sunday 15 September 2002

6-8 pm	Dinner	
8 pm	**Keynote Lecture** Tom Pollard University of Yale, USA	Actin filament dynamics at the leading edge: insights at atomic resolution.

Monday 16 September

Session 1. Motors involved in cell locomotion

9.00	Justin Molloy. University of York, UK	Molecular mechanisms of unconventional myosins studied by optical tweezers
9.40	Meg Titus. University of Minneapolis, USA	Title to be announced
10.20	Thierry Soldati. Imperial College London, UK	The hen and the egg problem: myosins and actin polymerisation!
11.00–11.30	Break for Coffee	
11.30	Richard E. Cheney, University of North Carolina Chapel Hill, USA	Myosin-X localizes to the tips of filopodia and undergoes intrafilopodial motility
12.10	Selected talk from posters	
12.30–2pm	Lunch and Posters	

Session 2. Cell–cell contact and cell locomotion

2.00	Joe Howard. Max-Planck Dresden, Germany	Collagen patterning by fibroblast traction: from small molecules to large structures.
2.40	Kate Nobes. University College London, UK	Regulation of cell locomotion by Eph receptors and ephrins.
3.20	Sasha Bershadsky The Weizmann Institute, Israel	Interplay between adhesion signaling and cytoskeletal organization in the contact-dependent regulation of cell shape and motility.
4.00 - 4.30	Break for coffee	
4.30	Jim Nelson. Stanford University, USA	Assembly of an apical junctional signaling nexus controlling epithelial cell organization.
5.10	Graham Dunn. King's College London, UK	New methods of following protein dynamics in living cells.
5.50	End of Session	
6.30–7.30	Dinner	
8–10pm	Poster Viewing	

Preliminary Programme, continued

Tuesday, 17 September

Session 3 – Actin polymerization and cell protrusion

9.00	Laura Machesky University of Birmingham, UK	The WASP-Arp2/3 complex pathway in cell migration and polarity
9.40	Tadaomi Takenawa University of Tokyo, Japan	Role of WASP family proteins in actin filament reorganization and cell motility.
10.20	Philippe Chavrier Institute Curie, Paris, France	Function of the small GTP-binding protein ARF6 in membrane dynamics in epithelial cells.
11.00-11.30	Break for coffee	
11.30	John Condeelis, Albert Einstein College of Medicine, NY, USA	Mechanisms of chemotaxis of carcinoma cells during metastasis from the primary tumour
12.10	Selected talk from posters	
12.30-2pm	Lunch and Posters	

Session 4 – Signaling and Cell Migration

2.00	Marc McNiven Mayo Clinic, Rochester, USA	Title to be announced
2.40	Clare Waterman Storer, Scripps Institute, USA	Microtubule/actin interactions in cell motility
3.20	Anna Huttenlocher University of Wisconsin, USA	Calpain regulation of cell migration
4.00 - 4.30	Break for coffee	
4.30	Richard Firtel University of California, San Diego, USA	Sensing and responding to chemoattractant gradients: role of PI(3) kinase in controlling directional responses
5.10	Rob Insall University of Birmingham, UK	Cell movement and the control of Scar & WASP in *Dictyostelium*
5.50	End of Session	
6.30-7.30	Dinner	
8 - 10pm	Poster Viewing	

Wednesday, 18 September

Session 5. Migration of cells *in vivo*

9.00	Mark Ferguson University of Manchester, UK	TGFß isoforms and cell migration in wound healing and palate development
9.40	Ray Keller University of Virginia, USA	Title to be announced
10.20	Rick Horowitz University of Virginia, USA	Some steps and directions in cell migration
11.00-11.30	Break for Coffee	
11.30	Daniel Louvard Marie Curie Institute, France	Role of villin in the regulation of actin microfilaments dynamics in intestinal cells *in vitro*
12.10	Carmen Birchmeier Max-Delbrück Centre Berlin, Germany	Genes that control migration in the mouse embryo.
12.50	Final 10 minute summary by organisers	
1.00	Lunch, and departure	

Other forthcoming meetings

2nd European Life Scientist Organization (ELSO) Meeting
29 June – 3 July 2002, Nice, France
Details from:
Ingeborg Fatscher, PO Box 1151,
Sandhausen, Germany, D-69199
e-mail: contact@elso.org

MicroScience 2002
ExCeL, London
9–11 July 2002
www.microscience2002.org.uk

The Royal Microscopical Society is organising a variety of meetings and courses in 2002, in addition to **Microscience 2002**. For details, see www.rms.org.uk.

XVIIIth FECTS (Federation of the European Connective Tissue Societies) meeting
27–31 July 2002, Brighton Centre, Brighton
Details from:
Dr JC Lewthwaite
Department of Veterinary Basic Sciences, Royal Veterinary College, Royal College Street, London, NW1 0TU
jlewthwaite@rvc.ac.uk

BSCB Autumn Meeting 2002
Cell behaviour (5th Abercrombie Meeting)
15-18 September 2002, St Catherine's College, Oxford
Organizers: Peter Clark, Anne Ridley, Michelle Peckham
Contact: p.clark@ic.ac.uk

Signalling the Future
3–6 September 2002, University of Liverpool
Details from: Huw Rees
reeshh@liv.ac.uk
www.signal2002.com

18th International Pigment Cell Conference
9–13 September 2002, Egmond an Zee, The Netherlands
http://users.raketnet.nl/ipcc/

The International Society of Differentiation 12th International Conference on Cancer and Development
Neurobiology and Cellular Microenvironment
14-17 September 2002, Lyon, France
www.package.fr/ISDmeeting2002.html

Genomics and Proteomics in Cell Biology
8–11 April 2003, University of Warwick
Organisers: Julian Downward (London), Julie Ahringer (Cambridge), Julian Blow (Dundee), Paul Crocker (Dundee), Rick Livesey (Cambridge), Mark Marsh (London), Paul Luzio (Cambridge)

Cell Biology of Cancer: Joint meeting with the British Association for Cancer Research
14–17 September 2003, St Catherine's College, Oxford
Organisers: Jon Pines (Cambridge), Ian Stratford (Manchester)

Techniques in Molecular Biology
University of Hertfordshire (UK)
www.herts.ac.uk/natsci/STC

Organized by:
Department of Biosciences
University of Hertfordshire
College Lane, Hatfield, Herts AL10 9AB, UK.
Details and application forms from:
Dr Ralph Rapley.
tel: (01707) 285097; fax: 286137
R.Rapley@herts.ac.uk

Molecular Biology : Basic Terms And Techniques
A one-day lecture/workshop designed to introduce those with very little or no experience of molecular biology to the complex terms and jargon used in the field.
26 June 2002

Introduction to Bioinformatics
A two-day introductory practical lecture/ computer based course covering aspects web based nucleic acid and protein bioinformatics.
2–3 July 2002

RNA Extraction and Analysis
A one-day introductory practical laboratory/ lecture course covering aspects of RNA extraction, analysis and applications.
4 July 2002

PCR Methods and Applications
A one-day introductory practical laboratory/ lecture course covering aspects of PCR amplification, applications and alternatives.
5 July 2002

Techniques in Molecular Biology: Proteins (2 days) and Nucleic Acids (3 days)
These intensive laboratory based courses covering Protein Techniques (2 days) and Nucleic Acids Techniques (3 days) can be taken alone or together on the dates indicated. 2–3 Sept 2002 (Proteins) and 4-6 or 11-13 Sept 2002 (Nucleic Acids) : Hatfield Campus, Hatfield, UK

Understanding The Use Of Mass Spectrometry In Proteomics
This one-day training course is designed to introduce the various mass spectrometric techniques used for the analysis of proteins and peptides.
18 September 2002

Application to join the BSCB

Please complete and return along with a signed Direct Debit mandate to:
Margaret Clements, Department of Zoology, Downing Street, Cambridge, CB2 3EJ.

Name: ..... Mr/Ms/Mrs/Dr/Prof

Position: ..... Male/Female

Academic qualifications: .....

Email: .....

Telephone: .....

Fax: .....

Address: .....

.....

..... Postcode: .....

Research interests: .....

.....

Membership of other societies:

.....

BSCB Member	Proposer	Seconder
Name:	.....	.....
Membership Number:	.....	.....
Signature:	.....	.....

Applicants without proposers should enclose a brief CV

The society has an searchable database of its members on the BSCB web page; if you wish your details to be included tick here ☐

Applicant's signature: ..... Date: .....

INSTRUCTIONS TO YOUR BANK/BUILDING SOCIETY TO PAY DIRECT DEBITS

British Society for Cell Biology

DIRECT Debit

Please complete parts 1, 2, 3, 4 and 6 to instruct your branch to make payments directly from your account. Then return the form to: British Society for Cell Biology, c/o Margaret Clements, Department of Zoology, Downing Street, Cambridge, CB2 3EJ.

To The Manager, Bank/Building Society

.....

Address

.....

.....

..... Postcode .....

Originator's identification number | 9 | 4 | 1 | 4 | 5 | 1 |

FOR BSCB USE ONLY
This is not part of the instruction to your bank/building society

5. Originator's reference number (for office use only) BRITSO | | | | |

1. Please write the full postal address of your branch in the box above.

2. Name of account holder

.....

3. Account number | | | | | | | | |

4. Sort code | | | — | | | — | | |

Banks/Building Societies may refuse to accept instructions to pay direct debits from some types of account.

6. Instructions to the Bank or Building Society

Please pay the British Society for Cell Biology Direct Debits from the account detailed on this Instruction subject to the safeguards assured by the Direct Debit Guarantee.

Signature .....

Date .....

This guarantee should be detached and retained by the payee

The Direct Debit guarantee

- This guarantee is offered by all Banks and Building Societies that take part in the Direct Debit scheme. The efficiency and security of the scheme is monitored and protected by your own Bank or Building Society.
- If the amounts to be paid or the payment dates change, the BSCB will notify at least 14 days in advance of your account being debited or as otherwise agreed.
- If an error is made by the BSCB or by your Bank/Building Society, you are guaranteed a full and immediate refund from your branch of the amount paid.
- You can cancel a Direct Debit at any time, by writing to your Bank or Building Society. Please also send a copy of the letter to the BSCB.

Honor Fell Travel Awards

Jointly funded by the BSCB and the Company of Biologists

Honor Fell Travel awards are made to provide financial support for younger BSCB members at the beginning of their research careers to attend meetings. Applications are considered for any meeting relevant to cell biology. The amount of the award depends on the location of the meeting. Awards will be up to £250 for UK meetings (except for BSCB Spring Meeting for which the registration and accommodation costs will be made, even in excess of £250), up to £350 for European meetings and up to £450 for meetings in the rest of the world.

Awards are made throughout the year.

The following rules apply:
- Awards are not normally made to applicants over 35 years of age
- Applicants must have been a member for at least a year
- No applicant will receive more than one award per year and three in toto
- The applicant must be contributing a poster or a talk.

Applications should be sent to

Kathryn Ayscough, IBLS, Davidson Building, University of Glasgow, G12 8QQ.

All applications must contain the following:
- **the completed and signed application form (below)**
- **a copy of the abstract being presented**
- **a copy of the completed meeting registration form**

Application for an Honor Fell travel award

Full name and Work address

(write clearly – this will be used as a return label)

.....

.....

.....

.....

.....

E-mail address: .....

Age: .....

BSCB Membership number: .....

The years of previous Honor Fell awards:

.....

Degrees (with dates): .....

.....

Present position: .....

.....

Key publications (2) or research interests:

.....

.....

.....

Number of meetings attended last year:

.....

Meeting for which application is made (title, place, and date):

.....

.....

.....

Estimated expenses: Travel: .....

Subsistence: .....

Registration: .....

Have you submitted any other applications for financial support? YES NO (delete as applicable). If YES, give details inlcuding source and whether these monies are known to be forthcoming:

.....

.....

Supporting statement by Head of Department:

This applicant requires these funds and is worthy of support. I recognise that in the event of non-attendance at the meeting, the applicant must return the monies to the BSCB and I accept the responsibility to reimburse BSCB if the applicant does not return the funds.

Signature: .....

Name: .....

Applicant's signature: .....

Name: .....

British Society for Cell Biology
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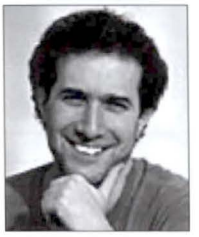
e-mail: d.archer@cwcom.net



The British Society for Cell Biology
Society business

Minutes of the AGM
Friday 22nd March 2002

1. Apologies
Apologies for absence were received from the following committee members: Fiona Watt, Louise Cramer, Bill Earnshaw, Angus Lamond, Roy Quinlan, Jonathan Pines, Paul Luzio, Charles Streuli and Robert Insall.

2. Minutes of the last AGM
The minutes of the last AGM were approved.

3. Committee resignation
It was announced that Chris Hawes had tendered his resignation because of time pressures and that the Committee had accepted.

4. Election of New Committee Members
Three new committee members were elected: Jordan Raff (proposer, Jo Adams, seconder, Jon Pines), Michael Way (proposer, Fiona Watt, seconder, Angus Lamond) and Gillian Griffiths (proposer, Simon Hughes, seconder, Jo Adams).

5. Election of new members to the Society
The names of 117 new members were presented to the meeting and approved for election. The list is published on page 36.

6. President's Report
The President's report was presented by Michael Whitaker in Fiona Watt's absence.

The BSCB thanked Chris Hawes for his contribution to the Committee, and welcomed Gillian Griffiths, Michael Way and Jordan Raff as new committee members. Jo Adams was thanked for her contribution during her brief stint as Treasurer. Jo has left for the States, and her place as Treasurer is taken by Mark Marsh.

The BSCB would also like to thank the organiser of this year's Spring meeting, Michael Whitaker and all the session chairs. Yet again, the quality of the speakers was outstanding, the meeting was heavily oversubscribed and the poster sessions were really good. So, all in all, it was again a very successful meeting.

The Committee has agreed to fund bursaries to allow final year Undergraduate students to attend the Society's Spring meeting. Their Heads of Department would recommend students on the basis that they were seriously considering a career in science and would be liable to ensure the return of any funds in case of non-attendance.

The report ended with a request for contributions to the Society's activities: nominations for the Hooke medal, nominations for the committee, suggestions for meeting topics and contributions to our newsletter and website. The website has been remodelled, for which we should thank Simon Hughes. It now contains a section called softCELL aimed at students and teachers in schools. softCELL has been developed by David Archer, with contributions from the Committee and other members of BSCB.

7. Secretary's Report
A major change facing all charities is the increased force of the statements of recommended practice issued by the Charity Commissioners. These are no longer mere recommendations: they now have the force of law. There have also been recent amendments to these recommendations. One is that the trustees (that is BSCB Committee members) must now carry out a risk assessment for the charity and publish annually the major risks the charity faces.

It is also increasingly important that a high attendance be maintained at the AGM, as an indication that the trustees have the support of members. Please encourage your colleagues to attend.

Risk assessment
Charity trustees are now required to publish a risk assessment in their report. We have considered a variety of risks and have identified several risks whose likelihood/impact product is sufficiently large to cause us to consider how to mitigate the risk. These are:

- Meetings fail to take place
- Meetings organization company fails
- Misappropriation of funds
- Illegal actions by trustees
- Liability for meetings organized by non-trustees
- Unauthorized use of databases [BACS etc]
- Financial arrangements with BSDB: default/mismanagement

We propose to mitigate these risks by taking out appropriate insurance, by implementing the appropriate financial safeguards, by taking appropriate professional advice and by putting our relationship with BSDB on a firmer legal foundation.

Investment policy
We are now also required to state our investment policy to safeguard the Societies assets. In fact, we are not an asset-rich charity; very little of our income arises from a return on capital and we have very few tangible assets. Our annual turnover is comparable to our capital base. The Trustees' policy is to invest in low-risk and reasonably liquid assets, so that funds are readily available to meet any unforeseen needs that arise as a consequence of meetings activities.

8. Treasurer's Report
See following

9. Changes to Constitution
The changes to the Constitution set out in the Winter 2001 newsletter were presented and approved:

3. The Officers of the Society shall be a President, a Secretary, a Treasurer, a Meetings Convenor, a Membership Secretary, a Newsletter Editor and a Website Co-ordinator.

[replaces Publications Convenor and recognises the importance of the Society's web site]

7. The Members of the Executive Committee shall be elected for three years, in the first instance, with the possibility of renewal for a further three years. A member of the Committee who fails to contribute to the business of the Society may, at the President's discretion, be asked to step down.

8. President, Secretary, Treasurer, Meetings Convenor, Membership Secretary, Newsletter Editor, and the Website Co-ordinator may be re-elected by the Executive Committee, subject to approval at the next AGM, for a second term of office of another 3 years. They shall then not be eligible for re-election to the same office for one year, but they shall be eligible for any other office in the Society.

9. Each year the two ordinary members of the committee senior in order of election and having completed their term shall retire from office and shall not be eligible for re-election for one year.

[redresses inconsistencies in constitution, ie 12 ordinary committee members, three year term, two to retire each year; allows President to replace committee members who for any reason are unable to give their time to the Society]

11. Any Other Business
There was no other business.

Treasurer's report for 2001

Jo Adams took over the office of treasurer at the beginning of 2001 and ran the BSCB accounts for this year. Jo resigned at the end of 2001 to move to the USA and Mark Marsh took over the office in Jan 2002. On behalf of the BSCB, I thank Jo for her work for the society during 2001.

Due to unforeseen difficulties in completing the 2001 accounts, the presentation to the 2002 AGM was incomplete, though broadly in line with the numbers presented here. This then represents the completed accounts for 2001 and these will be presented for acceptance by the society at the 2003 AGM in Warwick.

The accounts indicate that the BSCB financial position is relatively healthy. There has been a modest increase in our reserves, though the sum indicated is inflated by approximately £25,000 due to funds that we currently hold from the postponed Sept. 2001 meeting to honor Martin Raff. Nevertheless, the assets held by the society were about £10,000 up on those held at the end of 2000. Significant amounts of these assets are currently held in National Savings and Money Market accounts where they earn a modest rate of interest. An account with the Abbey National has been closed. A HSBC USA dollar account was opened for simplicity and economy in handling USA dollar transactions.

The main income for the society was in subscriptions and grants from the Company of Biologists. The BSCB is very grateful to the Company of Biologists for their ongoing support. The major component of our spending was in support for Honor Fell Travel Awards, which again increased in 2001, the printing and distribution of our newsletter, support for meetings, development of the BSCB web site and contributions to the UKLSC. David Cooke and Co, Chartered Accountants, Botley, Oxford prepared the accounts.

Prospects for 2002 are reasonable. The society has now placed organizational responsibilities for its main and autumn meetings with Procon Conferences Ltd and responsibility for raising commercial support with Index Communications Meetings Services. The activities of these two organizations should help to ensure that BSCB meetings do not incur substantial losses.

We will continue to run a very active travel support scheme, with financial support from the Company of Biologists, and will seek opportunities to fund smaller regional special interest groups. We aim to maintain the societies reserves at about their current levels and currently see no reason why this should not be achieved. Finally, changes in the management of the society's finances have been implemented in accordance with the Charities SORP.

Mark Marsh, BSCB Treasurer

Trustees report for the year ended 31 December 2001

The trustees have pleasure in presenting their report for the year ended 31 December 2001.

Trustees

Dr. F. Watt (President)
Prof. M. Whitaker (Sec.)
Dr. J. Adams (Treasurer)
Dr. C. Streuli (Meetings Secretary)
Dr. S. Winder (Membership Sec.)
Dr. J. Marsh (Newsletter Editor - appointed 3/1/01)
Dr. K. Ayscough (Awards Sec.)
Dr. L. Cramer
Dr. W. Earnshaw
Prof. A. Hall (resigned 3/1/01)
Dr. C. Hawes
Dr. S. Hughes
Dr. R. Insall
Dr. P. Luzio
Dr. M. Stewart (resigned 3/1/01)
Dr. S. Kellie (resigned 3/1/01)
Prof. A. Lamond
Dr. J. Pines
Dr. R. Quinlan
Dr. I. Nathke (appointed 3/1/01)

Contact Address

The contact address of the Society is: c/o Margaret Clements. Department of Zoology, Downing Street, Cambridge, CB2 3DY.

Status

The Society is a registered charity, number 265816.

Objects

The object of the Society is to further the knowledge of cell biology.

Review of Activities

The financial results of the Society are set out on the following pages. Reports of the Society's meetings throughout the year are to be found in the quarterly magazine.

Reserves

The Trustees regularly review the reserves of the charity to ensure that sufficient liquid funds are available for the Society to meet its ongoing obligations.

Investment Policy

The Trustees' policy at present is to invest only in liquid investments in order that the Society's funds are fully accessible. During the year under review the Abbey National Five Star account was closed, as a better return was available on the money market.

Governance, internal control and risk assessment

Charity law requires the Trustees to prepare financial statements for each financial year which give a true and fair view of the state of affairs of the Society and of the surplus or deficit for that period. In preparing those financial statements, the Trustees have:

- selected suitable accounting policies and then applied them consistently;
- made judgements and estimates that are reasonable and prudent;
- stated whether applicable accounting standards have been followed, subject to any material departures disclosed and explained in the financial statements; and
- prepared the financial statements on the going concern basis.

The trustees have overall responsibility for ensuring that the Society has an appropriate system of controls, financial and otherwise. They are also responsible for keeping proper accounting records which disclose with reasonable accuracy at any time the financial position of the Society. They are also responsible for safeguarding the assets of the Society and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities and to provide reasonable assurance that:

- the Society is operating efficiently and effectively;
- its assets are safeguarded against unauthorised use or disposition;

- proper records are maintained and financial information used within the charity or for publication is reliable;
- the Society complies with relevant laws and regulations.

The systems of internal control are designed to provide reasonable, but not absolute, assurance against material misstatement or loss. They include:

- delegation of authority and segregation of duties;
- identification and management of risks;
- its assets are safeguarded against unauthorised use or disposition;
- that proper records are maintained and that financial information used within the charity or for publication is reliable.

The major risks to which the Society is exposed, as identified by the Trustees, are being reviewed. Certain systems are already in place to mitigate those risks and further systems are being established as necessary.

Independent Examiners Report to the Trustees of the BSCB on the Financial Statements for the Year Ended 31 December 2001

I report on the accounts of the Society for the year ended 31 December 2001, which are set out on pages 35 and 36.

Respective responsibilities of trustees and examiner

The charity's trustees are responsible for the preparation of the accounts. The charity's trustees consider that an audit is not required for this year (under section 43(2) of the Charities Act 1993 (the 1993 Act)) and that an independent examination is needed.

It is my responsibility to:

- examine the accounts (under section 43(3)(a) of the 1993 Act);
- to follow the procedures laid down in the General Directions given by the Charity Commissioners (under section 43 (7)(b) of the 1993 Act); and
- to state whether particular matters have come to my attention.

Basis of independent examiner's report

My examination was carried out in accordance with the General Directions given by the Charity Commissioners. An examination includes a review of the accounting records kept by the charity and a comparison of the accounts presented with those records. It also includes consideration of any unusual items or disclosures in the accounts, and seeking explanations from you as trustees concerning any such matters. The procedures undertaken do not provide all the evidence that would be required in an audit, and consequently I do not express an audit opinion on the view given by the accounts.

Independent examiner's statement

In connection with my examination, no matter has come to my attention:

1. which gives me reasonable cause to believe that in any material respect the requirements
   - to keep accounting records in accordance with section 41 of the Act; and
   - to prepare accounts which accord with the accounting records and to comply with the accounting requirements of the Act;

   have not been met; or

2. to which, in my opinion, attention should be drawn in order to enable a proper understanding of the accounts to be reached.

David Cooke MA(Oxon) FCA
David Cooke and Co.
Chartered Accountants
6 Seacourt Road, Botley,
Oxford OX2 9LD
21 May 2002

Statement of Financial Activities for the Year Ended 31 December 2001

	£	2001 £	£	2000 £
Income				
Subscriptions		22,307		23,143
Mailing list		2749		1596
Interest		4145		3048
Advertisements and fliers		5003		1303
Sponsored lectures		–		2000
Company of Biologists grants		72,134		39,190
Meetings		48,966		123,267
Other income		–		–
		155,304		193,547
Less: Charitable expenditure				
Costs of activities in futherance of the Society's Objects:				
Meetings	70,581		132,343	
Newsletter & leaflet costs	6336		5031	
Honor Fell Travel Awards	24,179		21,961	
	101,096		159,335	
Administration and other expenses				
Secretarial	1400		2612	
Committee expenses	3338		3322	
Subscriptions	530		4412	
Website expenses	6598		–	
Post, stationary, computer consumables	–		265	
Fax and telephone	1905		71	
Bank charges	310		328	
Accountancy and Independent Examiner	705		352	
Miscellaneous	390		1096	
	15,176		12,458	
Total expenses		116,272		171,793
Surplus/(Deficit) for the year		39,032		21,754

Balance sheet as at 31 December 2001

		2001		2000
		£		£
Current assets				
Prepayment and accrued income		289		–
National Savings Investment Account		54,326		51,749
Abbey National Five Star Account		–		17,490
HSBC Bank Accounts		114,423		27,403
		169,038		96,642
Less: Current Liabilities				
Income received in advance	33,011		–	
Creditors and accruals	705		352	
	33716		352	
Net Assets		135,322		96,290
Financed by:				
Accumulated Fund brought forward		96,290		74,536
Surplus/(deficit) for the year		39,032		21,754
		135,322		96,290

New members from April 2001

Abayasiriwardana, Keith
Allen, Scott
Allihiani, Rajaa Fahad
Alvarez, Isabel
Ardley, Dr. H.C.
Ashworth, Jason
Au-Yeung, H.W.
Bagader Alamodi, Hiba Saeed
Bailey, Dr. Louise L.
Bailey, Lorna
Bailly, Dr. Maryse
Balaraman, Priyadharshini
Balda, Dr. Maria S.
Battersby, Dr. Alysia
Bellett, Gemma
Benham, Dr. Adam
Bishop, Joanna
Blagg, Simone
Brady, Suzanne
Bridger, Dr. Joanna
Carroll, Dr. John
Carter, Stephanie
Celso, Cristina Lo
Cheng, Kin Yip
Chua, Chong Wei
Church, Stewart W.
Crouchley, Claire Marie
Day, Jon
Deepalakshmi, Putchen
Denny, Dr. Paul W.
Edwards, Dr. Dylan R.
Errington, Dr. Rachel
Espiskopou, Vasso
Feeney, Dr. Graham
Fish, Rhiannon S.
Fisher, Dr. Carolyn
Flight, Monica H.
Forraz, Nicolas
Gavrilovic, Dr J.
Gedge, Lucinda
Grewal, Dr. Seema
Griffiths, Dr. Mark
Ham, Dr. Jonathan
Hamill, Kevin J.
Hannah, Dr. Matthew
Harkness, Patricia C.
Harris, Dr. C.M.
Holcroft, Catherine E.
Howat, Dr. Sarah
Hudson, Nicola
Ihrke, Dr. Gudrun
Johansen, Jorunn N.
Jouvenet, Nolwenn
King, Emma
King, Mikayala D.A.
Koroleva, Dr. Olga
Kramer, Beatrice
Lax, Sian
Levakova, Vesselina
Liu, Sai Man
Maciver, Dr. S.H.
Matter, Dr. Karl
McDougall, Dr. Alex D.
Miller, Dr. Chris
Millo, Hadas
Mills, Stuart J.
Moffat, Dr. Katy
Mora, Ana
Murphy, Kevin
Natto, Manal J.
Noon, Luke
Olsen, Inger M.
Paterou, Athina
Pellegrin, Stephanie
Penman, George
Pleat, Dr. J.M.
Rajnoch, Dr. C.E.A.
Reimoser, Amy
Renwick, Steven J.
Rhenauth, Cassandra
Richardson, Kirsty
Roder, Dr. John
Ross, Heike
Rossignol, Pascole
Russell, Matthew
Sahlender, Daniela
Sapountzi, Vasileia
Savvidou, Ellada
Sharp, Stewart
Shortt, Barry
Soong, Daniel
Spence, Dr. H.J.
Stefanovic, Sandra
Stovold, Craig
Tchibalina, Dr. Margarita
Tennant, Laura M.
Tselepis, Dr. Chris
Utton, Dr. Michelle
Vakharia, Krishna
Vas, Sharron
Vernallis, Dr. A.B.
Wakeman, Dr. Jane
White, Dominic
Wilkosz, Sylvia
Williams, Rebecca
Windsor, Ms. M.A.
Woodman, Robbie
Xue, Dr Luzheng
Zahedi, C.N.
Zouq, Nadia K.

The BSCB newsletter is published twice a year in June and December.

Submission:
If you have an idea for an article please e-mail the editor a brief outline first. Appropriate colour images are welcomed for consideration for the front cover.

It is preferable to send all articles, reports and images by e-mail (though alternatives can be arranged after contacting the editor). Attachments for text are best received in Microsoft Word and images as 200-300 dpi JPEG/TIFF or Photoshop files. Hard copy images can also be sent.

Submission of articles and images should be made to
Dr Joan Marsh, John Wiley & Sons, International House, Ealing Broadway Centre, London W5 5DB. Tel: 020 8326 3846.
Fax: 020 8326 3802. e-mail: jmarsh@wiley.co.uk

Meetings:
Please note there is no charge to advertise a scientific or educational meeting. Please contact the editor with details of any meeting you wish to advertise.

Deadlines:
For the final version of articles and other materials and adverts is 1 April for publication in June and 1 October for publication in December.

Please note the first version of any material must be received by the editor at least 2 weeks prior to this deadline so that any changes can be made.

Advertising Information
Single advertisement:
Back cover Black and White £275; Colour £425
Inside front cover Black and White £275
Full inside page, black and white only £220
$^1/_2$ Inside page, black and white only £110
$^1/_4$ Inside page, black and white only £55

Four advertisements, to cover two years. The costs are reduced by 30%.

Supply either on a zip disk or CD for Macintosh (Quark version 4, Quark version 3.32, JPG, TIF or PSD) with margins: top 26mm, left/right/bottom 20mm. Page size 218x280mm. Alternatively, supply film: single/four colour positive, right reading, emulsion down, screen 133x150.

For further information on commercial advertising contact: Margaret Clements, BSCB assistant, Department of Zoology, Cambridge University, Downing Street, Cambridge CB2 3EJ. Tel: +44 (0)1223 336655 Fax: +44 (0)1223 353980, e-mail: zoo-jeb01@lists.cam.ac.uk

Subscription information
Paying by direct debit:
Regular member £25
Student, school teacher, retired member £10
UK resident members NOT paying by direct debit:
Regular member £35
Student, school teacher, retired member £15
Overseas members paying by bankers draft:
Regular member £25
Student, school teacher, retired member £10

If you are still paying by standing order, please cancel it and set-up direct debit (form on p29). Those members who do not have a UK bank account should pay by bankers draft in pounds sterling payable to 'the British Society for Cell Biology'.

New members should complete an application form to join the BSCB (form on p28) and include it with their subscription dues. Send direct debit forms, bankers drafts and any membership application forms to Margaret Clements, Department of Zoology, Downing Street, Cambridge, CB2 3EJ.

Journals
BSCB members are entitled to a 25% discount from the individual subscription rate to all journals published by the **Company of Biologists**, and other discounts from other publishers. To take advantage of this offer, quote your BSCB membership number when ordering your subscription.

The discounted prices are as follows:

- *Journal of Cell Science* £106 or £122 for both print or online
- *Journal of Experimental Biology* £123 or £142 for both print and online;
- *Development* £173 or £199 for both print and online.
- *Journal of Cell Biology* **special 2002 discounted subscriptions** $365 print, $55 online or $420 for both print and online;

The following journals from **John Wiley & Sons** have discounts of 25–65% (*https://secure.interscience.wiley.com/order_forms/bscb.html*)

Journal	BSCB rate	Standard rate
The Anatomical Record	$150	*
BioEssays	$99	$160
Cell Motility and the Cytoskeleton	$150	$425
Developmental Dynamics	$125	$165
Genesis	$60	$99
Journal of Cellular Biochemistry	$350	*
Journal of Morphology	$175	*
Microscopy Research and Technique	$295	$595

* No standard individual rate available; only available to institutions

NB: The price for the *Journal of Morphology* is now $175. If there are any members who have ordered the journal at the $150 rate, those orders will be honored.

Postmaster and General Inquiries
Send changes of address, amendments, and general queries to:
Margaret Clements, BSCB assistant, Department of Zoology, Cambridge University, Downing Street, Cambridge CB2 3EJ.
Tel: +44 (0)1223 336655 Fax: +44 (0)1223 353980,
E-mail: zoo-jeb01@lists.cam.ac.uk

Invoices: send to: Professor Mark Marsh, Cell Biology Unit, MRC Laboratory for Molecular Cell Biology, University College London, Gower Street, London WC1E 6BT.

David Archer

From: <bscb@bscb.org>
To: <d.archer9@ntlworld.com>
Sent: 07 September 2002 16:13
Subject: Your BSCB membership information update

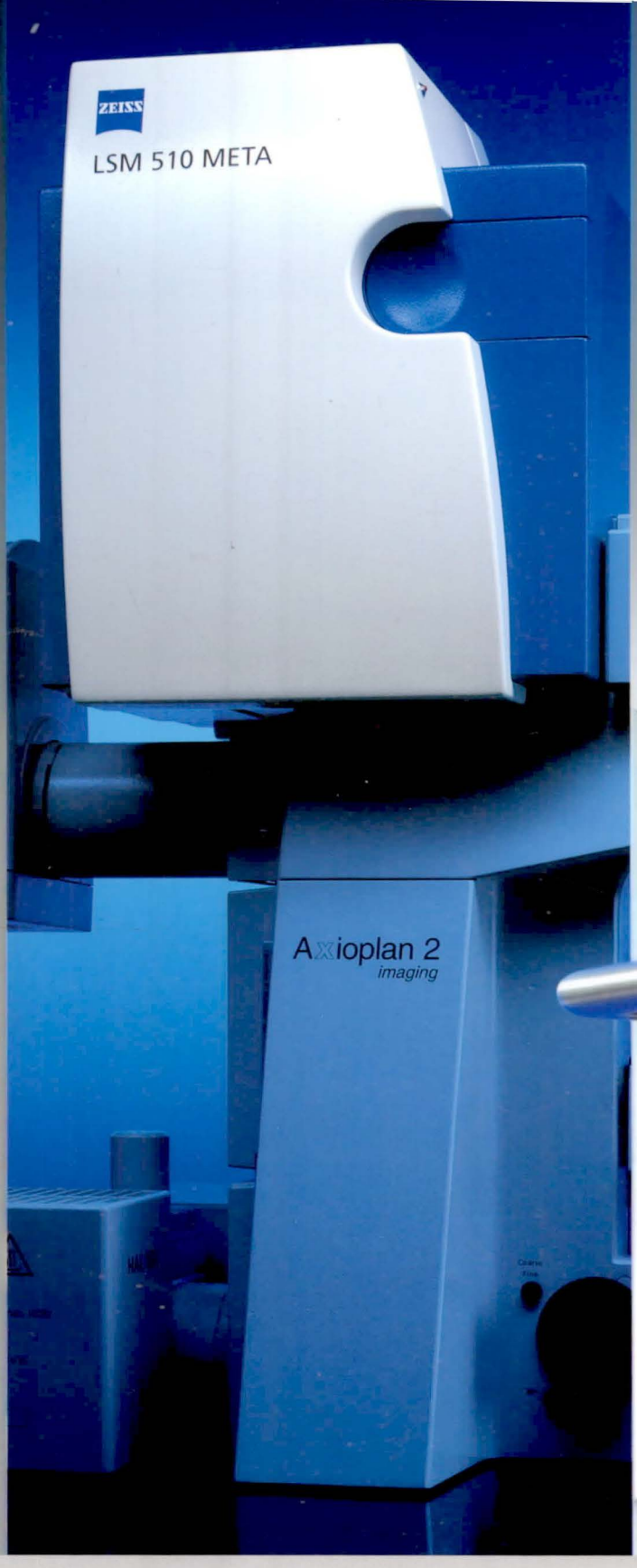
Congratulations!
You have successfully sent your updated member information to the BSCB.

The information entered for identification was:
FIRST NAME: David
LAST NAME: Archer
MIDDLE INITIAL: F
MEMBERSHIP No: 891
OLD EMAIL: d.archer@cwcom.net
OLD ADDRESS: 194 Silverdale Road, Earley, Reading, RG6 7NB
OLD PHONE: 9264494

The information that will be updated is:
NEW LAST NAME: Archer
NEW ADDRESS: 194 Silverdale Road, Earley, Reading. RG6 7NB
NEW EMAIL: d.archer9@ntlworld.com
NEW PHONE: 9264494

PERMISSION FOR CONTACT DETAIL PUBLISHING: YES
COMMENTS:
BSCB Schools Liaison Officer

Thank you for taking the time to update your records with the BSCB.
The BSCB Web Team



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