AUTUMN 2010

BSCB Newsletter

BRITISH SOCIETY FOR CELL BIOLOGY

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Meetings

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AUTUMN 2010

BSCB Newsletter

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Editorial

I must have sinned in a previous life because somehow I have just taken on two new roles: the first is Graduate Dean of my Faculty and the second is Editor of this newsletter. Multi-tasking has never been my forte, hence the ever patient Giles Newton, at the Wellcome Trust, who compiles this Newsletter, received a stack of files from me only days before the agreed deadline. Thanks Giles for your supreme efforts. Still, I think this job for me will be fun and rewarding and I hope you enjoy reading on.

The Autumn 2010 Newsletter boasts a feature colour centrefold article about CELLpics, which is an educational website jointly run by David Archer at the BSCB and Matthew Gratian at the Cambridge Institute for Medical Research (CIMR) and aimed at 'A' level students and first year undergraduates. A second article highlights the new Sheffield RNAi Screening Facility that was officially opened earlier this year. On page 6, you can read about what this communal facility offers cell biologists in the UK. I am sure you will agree that the cover image is stunning; it is the winning entry in the BSCB 2010 Image Competition and is the work of Dan Webber (Edinburgh/Cambridge). Read more about this competition on page 5.

Along with a number of meeting reports from students and postdocs, Jay Stone introduces herself as our new PhD representative. Jay has been a regular contributor to the BSCB Newsletter and in this issue she has written an advice piece to all PhD students suffering from low lab morale. Finally, in this section, there is a piece by one of our new Bristol PhD students on his thoughts after returning from his first conference – the BSCB Spring meeting in Warwick. It is not clear why student numbers at this meeting have been down in recent years – read Tom MacVicar's article and be inspired to attend this key meeting of the cell biology community in the UK.

Finally, I would like to encourage you to provide nominations for committee members, and/or suggestions for candidates worthy of the Hooke medal 2012; or how about suggesting the topic of a future feature article or, better still, writing one yourself?

The Editor: Kate Nobes, University of Bristol
catherine.nobes@bristol.ac.uk

The cover image is the winning entry in the BSCB 2010 Image Competition. Dan Webber's image shows neural precursor cells which, when exposed to the bone morphogenetic protein BMP4, rapidly differentiate and produce astrocytes (stained with GFAP in red) from a central sphere. Dan is a research associate at the University of Edinburgh and is currently visiting scientist in the Anne McLaren Laboratory of Regenerative Medicine in the University of Cambridge. You can read more about the image competition on page 5 of this issue of the newsletter.

Newsletter editor: Kate Nobes **Production:** Giles Newton **Website:** www.bscb.org **Printer:** Hobbs

News

Hooke Medal 2011 – Alex Gould

It is with great pleasure that we announce Alex Gould of the MRC National Institute for Medical Research as the winner of the 2011 Hooke Medal. Alex was a Beit and MRC Postdoctoral Fellow in the laboratory of Robb Krumlauf at NIMR studying mammalian Hox gene expression before setting up his own laboratory in 1998, also at NIMR, to work on *Drosophila*. Alex has made important contributions to the field of developmental neurobiology; in particular, he and his group recently discovered and dissected the molecular mechanisms involved in regulating the timing of cell cycle exit in the *Drosophila* central nervous system, which was published in *Cell* in 2008. This work demonstrates that through developmental time, progenitor cells transduce bursts of transcription factors into long-lasting changes in cell proliferation and cell identity. Additionally, Alex's highly original work on lipid metabolism in *Drosophila* has led to the demonstration that *Drosophila* oenocyte cells perform some functions equivalent to those of the mammalian liver. This work opens up a new avenue of research on the relationship between food intake and the regulation of lipid metabolism during tissue growth. In 2005, Alex became a tenured Group Leader at NIMR and three years later was elected to EMBO membership. Alex will be presented with his medal and deliver his medal lecture at the 2011 Spring Meeting at the University of Kent, Canterbury.

Hooke Medal 2010 presentation

The 2010 Hooke Medal was awarded to Karim Labib at the BSCB Spring meeting in Edinburgh.

Karim started his scientific career as a PhD student with Professor Sir Paul Nurse at the University of Oxford. He then spent a year as an EMBO fellow with Professor Sergio Moreno at the University of Salamanca in Spain, before completing periods of postdoctoral research with Dr Stephen Kearsey in Oxford and Dr John Diffley in London. Since 2001, Karim has led the Cell Cycle Group at the Paterson Institute for Cancer Research in Manchester.

During his Medal talk, Karim described some of the more recent work from his laboratory on the control of eukaryotic cytokinesis and the regulation of DNA replication forks. He illustrated the power of using the budding yeast *Saccharomyces cerevisiae* as a model organism to unpick the genetics, biochemistry and cell biology of these processes and then told us of a functional genomics screen to identify new cell cycle proteins. The audience was wowed by the elegance and beauty of the experiments and the clarity with which Karim took us through these complex systems. It was a memorable talk and demonstrated to all that Karim was a worthy recipient of the Hooke Medal.

The BSCB invites nominations for the Hooke Medal 2012 from any society member. If you wish to nominate anyone, please contact the Secretary with a brief supporting statement.

Half price membership for new members in October 2010

Please encourage your new lab members and colleagues to join the BSCB; this should give them a great incentive to do so!

BSCB Summer Studentships

The BSCB Summer Vacation Studentships offer financial support for high calibre undergraduate students to gain research experience in cell biology during their summer vacation. Our aim is to encourage students to consider a post-graduate research career in cell biology after their undergraduate studies. Full details will be available in the Spring so check **www.bscb.org** for information on applications.

Details

1. Studentships will only be awarded for students who have yet to complete their first degree, usually prior to their final year of studies.

2. Awards comprise a student stipend of £180 per week for up to 8 weeks plus consumable costs of up to £500 to the host laboratory. The award will be made via a supervisor and administered by the host institution.

3. Applications must be made by the prospective supervisor on behalf of a named student, and must include the student's CV together with a reference from their personal tutor (or equivalent). Undergraduate students are encouraged to develop a project with the help of the supervisor.

4. Supervisors must be a BSCB member before, or on the date of, the application. Only one application may be submitted per supervisor. There are no restrictions concerning the nationality of the student, nor do they have to be a student at a UK university.

5. The deadline for applications for summer 2011 is 31 April (see website at www.bscb.org). The application should include the applicant's name, contact details, host institution and department, the student's CV, a supporting statement from the student's academic tutor, and the project title, with a brief description of the proposed research project in the context of the research of the group. The research project must be on a topic in the broad area of cell biology and must not form part of the student's normal degree work. Projects will be assessed for objective, achievability and opportunity to the student. Students are encouraged to undertake a project at an institution other than the one at which they are studying.

6. Applications will be reviewed by a panel of members from the BSCB committee. Feedback on unsuccessful applications will not be provided.

7. The successful applicants will be required to submit a short article describing the outcome of the project for the BSCB Newsletter. To be submitted within two months of completion of the project.

2010 summer studentships

The 2010 summer studentships were awarded to Neel Shah to work with Dr Justin Sturge (Imperial College London), Gayle Bishop to work with Prof. David Stephens (Bristol), Malek Petek to work with Dr Daniel Ungar (York), Anne Iltzsche to work with Prof. Philip Gordon-Weeks (King's College London), Malgorzata Szajewska-Skuta to work with Dr Stefan Marciniak (University of Cambridge), Amy Fergus to work with Prof. Philippa Saunders (MRC Human Reproductive Sciences Unit, Edinburgh), Julia Oswald to work with Prof. Andrea Brand (Gurdon Institute, Cambridge), Kiran Bansal to work with Dr Juliet Coates (University of Birmingham) and Ioannis Sarigiannidis to work with Dr John Doonan (John Innes Centre, Norwich).

Congratulations to these awardees; reports from these students will be published in the Spring 2011 issue of this newsletter.

BSCB committee

Following a call for new members earlier this year, we are pleased to announce that Jean-Paul Vincent (MRC-NIMR), Steve Royle (University of Liverpool), and Caroline Austin (Newcastle University) will be joining the committee in 2011. The turnover of membership of the committee is such that nominations are always welcome and should be sent to the Secretary, Liz Smythe (e.smythe@sheffield.ac.uk).

BSCB Science Writing Prize 2011

This autumn, the BSCB will again be running its Science Writing Competition for BSCB members. The BSCB Science Writing Prize is open to all BSCB student and postdoctoral members – membership is a requirement for entry. We particularly will be looking for articles that cover topics of key relevance in biomedical science. Articles need not be limited to research areas but you might like to try to communicate your own project in a clear and concise way to a non-specialist audience. Other topics should be relevant to cell biology in its broadest context; examples could include the impact of stem cell technology, a feature on an important disease condition, or a wider science policy issue such as government funding of basic versus translational science.

Articles should be limited to 1000 words but can include images where relevant (these will be reproduced in black and white only in the newsletter).

The winner will receive a prize of £300 and the winning entry will be published in the BSCB newsletter and online. We are very pleased to announce that shortlisted entries will be judged by Tania Hershman, a former science journalist, and currently writer-in-residence in Bristol University's Science Faculty. Tania's award-winning short stories have been widely published in print and online, and a week of her flash fiction was broadcast on BBC Radio 4 in June 2010. Tania's website is www.taniahershman.com.

The deadline for entries is the 16th December 2010. Entries should be sent to Paul Andrews (p.d.andrews@dundee.ac.uk) as electronic files (preferably Word format with any illustrations or images sent separately as TIFF or JPG).

The winner of the 2010 BSCB Science Writing Prize was Susan Turrell for her essay "Inducing Apoptosis-Countdown to Self-Destruction". You can read the 2010 winning entry on the BSCB website (www.bscb.org).

President's report, 20 June 2010

I hope you all agree that this has been a very good year for the BSCB. As usual we were involved in two meetings. In September 2009, our sister society the British Society for Developmental Biology hosted the 16th International Society of Developmental Biology in Edinburgh. The BSCB sponsored Margaret Fuller as plenary speaker and our secretary, Elizabeth Smythe, ran a very successful session on "Asymmetry in Cells". Our annual Spring Meeting in 2010 was held in Warwick jointly with the BSDB and had two main themes "The Cell Biology of Disease" and "10 Years on from Sequencing the Human Genome". The BSCB organisers Paul Andrews and Elizabeth Fisher assembled a stellar line up of international and national speakers and all who attended agreed that the quality of the meeting was first rate. As is usual, this was also an opportunity to present the Hooke Medal and this year's recipient was Karib Labib from the Paterson Institute in Manchester. Karim wowed the audience with his beautiful talk on chromosome replication and the regulation of cytokinesis. The other award presented at the meeting was the BSCB Science Writing Prize that went to Susan Turrell, a PhD student at the University of Leeds, for her essay "Inducing Apoptosis - Countdown to Self-Destruction". We are extremely grateful to the journalist and presenter Vivienne Parry for judging the competition.

In other areas BSCB has increased its activities on a number of fronts. For the second year we have been supporting a Summer Studentship scheme to allow undergraduates to gain valuable work experience in a research laboratory. I very pleased to report that the success of this scheme means that we will be increasing the number of studentships available in 2010 and you can read what these students get up to in the BSCB Newsletter. Another innovation was the launch of the BSCB Image Competition. The winners not only get a prize but also get to see their beautiful images on the BSCB newsletter cover. Please send us your favourite images so that all the BSCB community can admire them.

Aside from that, the BSCB has gone political by strongly supporting the Campaign for Libel Reform. If this is news to you, please follow the links on our website to read more about this very important issue that impacts on all scientists in the UK, and to add your own name to the national petition. We have also been dragged up do date, thanks to our very active PhD student representative Veronika Ganeva, and now have a Facebook site.

As is traditional, I would now like to express my thanks to a number of committee members who left this year – Veronika Ganeva, our wonderfully energetic and enthusiastic PhD rep and to Margarete Heck and Vania Braga both of whom were active and valued colleagues. Vania's legacy will live on, as it is thanks to her that we modernised our logo. Very special thanks go to David Stephens for the terrific job he has done as newsletter editor for the past 5 years and for being that most important of things – an enthusiastic and staunch supporter of cell biology in the UK. The good news is that a number of new committee members have been signed up and are already working actively for the society, Jay Stone as the new PhD rep, Kate Nobes has taken over as newsletter editor, Patrick Hussey who, amongst other things, provides representation for the plant cell biology community and Grant Wheeler who spans the cell and developmental biology communities with his work on in vivo cell migration. We are also very grateful to all the organisations who generously sponsor our activities, in particular the Company of Biologists, who generously under-write our meetings and travel awards.

I am optimistic that next year the BSCB will continue to

prosper. With the new ventures we have launched we have tried to engage all our membership. But, we are also always looking for new ideas, for your opinions and for your input. There are now a myriad of ways that you can do this. Enter a BSCB competition, have your say on Facebook, write something for the Newsletter, come to a BSCB meeting. This is my last report and so I would like to take this opportunity to thank everyone involved in the BSCB during my 5 years as President. I know it is corny to say but this truly has been an honour and a privilege for me. What I am delighted to tell you is that the next BSCB President is Jordan Raff. Many of you will know Jordan and share in my confidence that under his Presidency the BSCB will go from strength to strength.

Clare M Isacke

Schools News

CELLPICS AS CENTREFOLD

Those of us who have worked on CELLpics and softCELL over the years feel very honoured that CELLpics is the subject of the first colour centrefold of the BSCB Newsletter. We are particularly grateful to the Committee of the BSCB and the Newsletter immediate past Editor, David Stephens, and the current Editor Kate Nobes for making this decision.

For those new to the BSCB, CELLpics is a joint enterprise between the BSCB and the Cambridge Institute for Medical Research (CIMR). The website takes a lot of computer space and technical time to create and curate. Paul Luzio, Director of the CIMR kindly agreed to provide this facility and staff assistance. The concept and text are supplied by the BSCB through David Archer, Schools Liaison Officer.

User statistics show that CELLpics is now used by students in many countries and we are proud that CELLpics and softCELL have been selected for inclusion in several discriminating portal sites. These sites range from those for school use to those for university level studies. Please help publicise this Public Engagement aspect of the work of your Society.

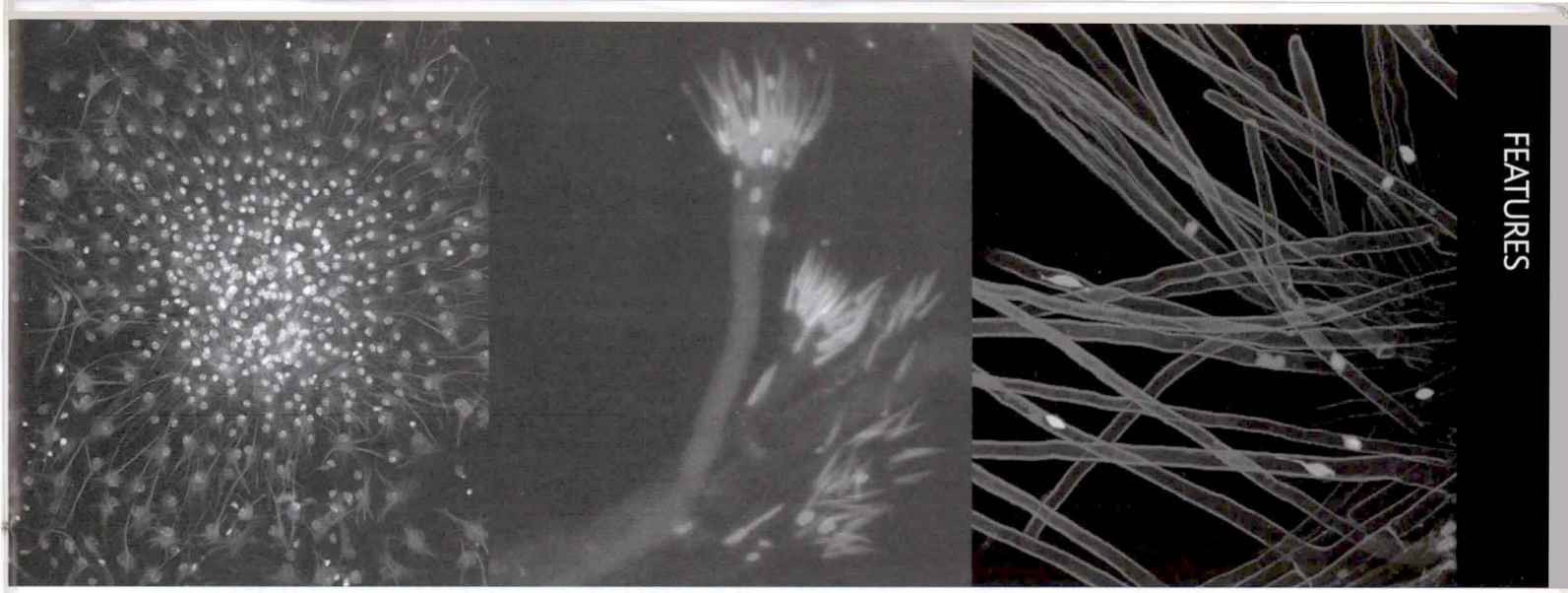
DOES 'A-LEVEL' A* GRADE = 'THINKING OUTSIDE THE BOX'?

As I write this note the first batch of 'A-level' results in the UK (except Scotland) with the extra A* grade are awaited with interest.

The A* grade has been introduced partly in answer to universities voicing concern that there was virtually no way that students who could 'think outside the box', could be recognised within the examination structure.

Ahead of the results, commentators are suggesting that an award of an A* grade at 'A-level' will indicate whether the student attended a good independent school or a state school. I make no comment, we shall soon see!

David Archer



1st BSCB Image Competition Winners

Cell biology would be nowhere without some photons to drench the otherwise dim and often lifeless specimens that we so carefully produce. Thanks to some remarkable developments in microscopes and staining tools, we can capture these photons on the rebound and sit in awe and wonder at the hitherto invisible beauty found in nature. But its now quite easy to prepare specimens, at least for conventional microscopy, so what makes an image an outstanding image? Is it the biology underlying? Is it the technical prowess of the sample maker? Is it the composition or colour choice? Is it all these together? I think it is all or at least most of the above. It's important to consider the target audience for an image. A reviewer of a paper needs clarity and conventionality (RBG only or else), whereas the cover of a journal gives room for more artistic license. The extreme is making science images for the public art space an experience I find fascinating and rewarding, but others might run a mile from. What is true in all these scenarios is that images have impact. It might be to illustrate a key scientific discovery in a paper or presentation, or as a hook to draw the public into a story. Learning what is appealing or unappealing is as critical, in some sense, as the ability to write clearly and in a way that suits the target audience.

So, why run a competition for images of cell biology? I suppose we (the BSCB committee) wanted to encourage the production of high quality images of biological science and reward it, albeit in a modest financial way. We hoped to be able to publicise the good things the BSCB members do, through the images, so the winners will be able to see their lovingly formed work on the glossy cover of the newsletter. This is the first year of the competition, and after a slow start a good number of entries popped into the inbox. Next year I hope we get more. Entries were diverse in subject matter – from *Arabidopsis* root hairs to human neurons – all good and some very high quality. I anonymised the entries and sent them for judging to a panel of highly trained crack judges (a.k.a some willing committee members) who delivered their verdict.

There are two kinds of light – the glow that illuminates, and the glare that obscures. James Thurber (1894–1961)

We are very pleased to announce our first prize winner this year is **Dan Webber** for his image **Glial explosion**. The image (above left), a favourite with all the judges, is a beautiful composition showing neural precursor cells which when exposed to the bone morphogenetic protein BMP4 rapidly differentiate and produce astrocytes (stained with GFAP in red) from a central sphere. Dan is a research associate at the University of Edinburgh and is currently a visiting scientist in the Anne McLaren Laboratory of Regenerative Medicine in the University of Cambridge.

The second prize winner is **Dr Helen Cooper White**, from the School of Biosciences at the University of Cardiff, with her very 'botanical' image (centre) of ***Drosophila* spermatids**. According to Helen "the spermatids remain connected to their sister cells until late in differentiation. Actin-rich investment cones (coloured in green but labelled with FITC-phalliodin) start at the nuclei (coloured in magenta) and progress along the spermatids, eliminating excess cytoplasm from the spermatids, to result in streamlined individual sperm".

The third prize winner is an image (right) from **Dr Juliet Coates** from the School of Biosciences at The University of Birmingham, entitled ***Arabidopsis* root hairs**. In Juliet's words "Root hairs (outlined in red) are long thin cells that project from the main body of a plant root (bottom right hand corner) to increase its surface area for nutrient- and water-uptake. In this picture, cell nuclei are marked in green using green fluorescent protein".

The winning images can be seen on the BSCB website (www.bscb.org). Many thanks to all those that entered and if you didn't get selected this time, please start collecting some images for next year.

Paul Andrews, University of Dundee

The Sheffield RNAi Screening Facility

The University of Sheffield RNAi Screening Facility (SRSF), funded by the Wellcome Trust, was opened on 17 March 2010 by the University of Sheffield's Pro-Vice-Chancellor for Research & Innovation, Professor Richard Jones (FRS).

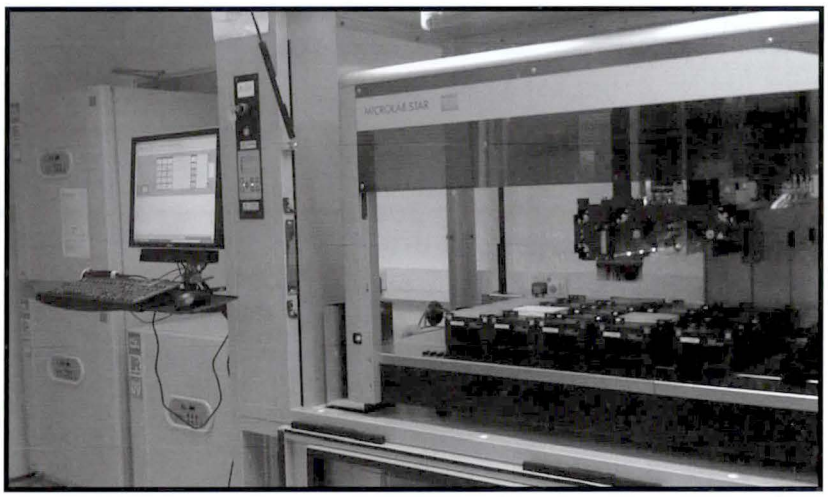
To celebrate its opening, the SRSF invited Professor Scottie Robinson (Cambridge), Dr. Nic Tapon (London), Dr. Barry Thompson (London), Dr. Stephanie Mohr (Harvard), Dr. Anthony Davies (Dublin) and Mr. Thomas Horn (Heidelberg) to participate in an opening symposium. Talks were also given by Dr. Martin Zeidler and Dr. Stephen Brown to introduce the facility. The single day event, sponsored by industrial collaborators, was a success with excellent vibrant talks, and 100 researchers participating from all over the UK enjoying the grand settings of Firth Hall. During the day participants were offered a tour and a demonstration of how the facility works including the latest in high throughput technologies.

The SRSF is the first *Drosophila* RNAi genome wide screening facility publicly available for research groups to use in the UK. The facility offers the opportunity for groups wishing to do RNA interference (RNAi) experiments to come and use the pre-arrayed libraries and the automated equipment, so that pipetting and labour intensive result acquisition becomes less arduous. The RNAi libraries at the SRSF only work on *Drosophila melanogaster* cell lines, but most assays can be scaled across other model organisms. We currently have mammalian and yeast biologists, as well as Drosophilists developing screens in *Drosophila* cells.

How does the screening process work? Groups wanting to do a screen create all the clones used in their experiments, grow their cells and develop their assay in their institute. When they have used our assay development plates and the assay has passed the test, set by our local management group, the screen is then placed in the queue. Advice is given on how to further refine the assay and place the assay into a high throughput screen. For more information see our web page, where a more detailed picture of these events is provided (www.rnai.group.shef.ac.uk).

The SRSF uses the HD2.0 non-off target effect library, which is one of the latest libraries to have been produced in order to reduce some of he unspecific gene knock-down effects that can occur during this type of experiment. Why do we use *Drosophila* cells? *Drosophila* cell culture is an ideal tool to use for genome wide screens, as the genome is smaller, and presents itself with less redundancy than its vertebrate counterparts. There is also no need for transfection to get the RNAi probes into the cells, as the cells readily take up the dsRNAs without the adverse effects observed in mammalian cells. *Drosophila* RNAi libraries are built as double stranded RNA (dsRNA) and therefore the cost of generating the library is much lower than for vertebrate siRNA screens, being able to produce dsRNA in the lab. Pricing and more information regarding the screening at the SRSF can be found on the SRSF web page.

The SRSF offers the library and equipment so that researchers can come and screen using the facility and equipment to identify genes showing a response in the assay they have developed prior to screening. There are currently 3 collections available for screening, including the whole genome, the kinases and the phosphatases, but researchers interested in other collections or pre-defined collections are invited to contact us, as we always welcome customers and new projects. We also offer a service for clone selection from our library, and can make novel dsRNA collections for customers, ie, hits after analysis can be selected for secondary screening.



Examples of the type of screen that can be done at our facility include microscope or plate reader based assays. Using high content microscopy, screens can be grouped into cellular morphological changes, low resolution and high-speed fluorescent "in cell westerns", and protein translocation assays. Whole genome RNAi screens can also be developed for plate readers and assays measured with absorbance, fluorescence or luminescence. Plate reader assays are much more rapid, compared to the high content microscopy. Some support is offered by staff at the facility during screening and once the results have been acquired we can further help with analysis, for example, either using the statistical package HTS2 run in 'R', or by developing algorithms for the high content microscope using the proprietary software ImageXpress and AcuityXpress.

If you are further interested in high throughput RNAi screens at the SRSF or some of the technology or analysis methods we use, please get in touch via e-mail to rnai@sheffield.ac.uk.

Stephen Brown

SRSF Local Management Team
Dr Martin Zeidler
Prof Liz Smythe
Prof David Strutt
Dr Alex Whitworth

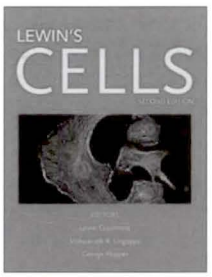
SRSF Manager
Dr Stephen Brown

Book Reviews

First there was Gray's Anatomy, then Lewin's Genes and Lewin's Cells, and coming soon...?

LEWIN'S CELLS, SECOND EDITION; EDITORS: LYNNE CASSIMERIS, VISHWANATHAN R LINGAPPA, GEORGE PLOPPER

BSCB MEMBERS CAN PURCHASE AT A 15% DISCOUNT PRICE



Lewin's Cells, Second Edition
Eds: L Cassimeris, VR Lingappa, G Plopper
Publisher: Jones and Bartlett Publishers
Spring 2010.
ISBN: 978-0-7637-6664-1. Paperback.
1053 Pages
Price: £44.99
BSCB members can purchase at a 15% discount price, see Deals for Members on the BSCB website

In the world of classical literature, first editions are much prized. In science, old first editions of tertiary level textbooks have little monetary value. However, when a book first appears it is viewed with interest to see what new approaches, including art-work and 'add-ons' are taken to present knowledge to students eager to learn and hence buy the book.

Authors and publishers of modern science textbooks are particularly good at 'adding value' in the form of study aids and additional material, on the Internet or on DVDs. Some study aids such as 'Key Concepts', 'Chapter Summaries' or 'Chapter outlines' are good sign-posting aids, whilst others provide an interest beyond the book. In cell biology, 'translational medicine' boxes are especially useful in showing students that the applied side of the subject might help alleviate or cure disease.

Lewin's Cells 2e has an interesting history. Some of its former life is to be found in Genes VII [published by Oxford University Press] and Genes VIII [published by the Pearson Prentice Hall Group]. After Genes VIII, parts were removed and embodied later in the first edition of 'Cells'. Genes IX [minus some cell biology] was published by Jones and Bartlett Publishers who by this time had taken over Lewin's titles including his Virtual Text, Ergito website. Jones and Bartlett then published Cells 1e. The first edition had three other 'Lead Editors', in addition to Benjamin Lewin and there were many guest authors employed as specialists in their field to write appropriate sections.

Second editions of science textbooks are especially interesting. A second edition means that the first edition sold sufficiently well that the hard-headed publisher considers it is worth producing. And, rather like an up-dated model of car, the second edition will have ensured that the book has been thoroughly 'road tested' by students and lecturers and modified and updated accordingly.

Cells 2e, like its predecessor, has much to recommend it. There are now three Lead Editors, Lynne Cassimeris, Vishwanath R Lingappa and George Plopper; and they have made a good book even better. There are four new chapters covering Bioenergetics and Cellular Metabolism, DNA Structure, Replication and Repair, Transcription, Translation and Gene Regulation, and Protein Structure and Function emphasising the importance of these topics in current cell biology.

On dipping into various of the Chapters in this new book, I found lots to make me feel this will be an outstanding teaching aid. For example, it was pleasing to see 'quorum sensing' explained [Chapter 20, Prokaryotic Cell Biology], although it would be even better to have seen it cross-referenced to Chapter 18, Principles of Cell Signalling. But that is a minor complaint. New and welcome additions also include 'Medical Applications' boxes and 'Concept and Reasoning Checks'.

A student website is available without the use of fiddly passwords, although it will be interesting to see whether it is kept updated. The website items include a good glossary but looking up a word at the back of the book seemed quicker! An Instructor's CD-Rom [not inspected] is available and contains an Image Bank, Power Point Lecture Outlines, and a Test Bank.

Benjamin Lewin has now bowed out as a Lead Editor of both Genes and Cells. He has however left his well earned name in the titles 'Lewin's Genes' and 'Lewin's Cells'. In 'Cells 2e', it is good to see he is still co-authoring Chapter 1 [with Lead Editor Vishwanath Lingappa] and Chapter 10 [with Jocelyn E Krebs].

A writing style named 'Massachusetts Declarative' by Sydney Brenner, and said to have been developed by Jim Watson, was also used by Lewin, the founder of the journal *Cell*, when he edited it. Lewin also used it in the many editions of Genes and happily, it is still evident in Genes X in the 'Chapter Outlines' and 'Key Concept' sections. In 'Cells 2e' many of the 'Key Concept' sections are 'Declarative' but the text of the 'Chapter Outline' is less so. Some argue that being declarative is dangerous – the body of knowledge may soon change. In my view, whilst scientists can never be 100% certain, prefacing everything with 'ifs and buts and maybe', accepted as it is amongst colleagues, does not sit well with students and the general public. They prefer confidence today, even if the knowledge base changes tomorrow.

There are many reasons why you should buy and recommend this book to students and your library, but for BSCB members here are two more bonus points aside from the special deal price: first, the image used for the front cover was produced by BSCB Committee Webmaster, Paul Andrews, and a previous BSCB Secretary, Birgit Lane, wrote the excellent chapter on 'Intermediate Filaments' [Chapter 13].

David Archer, BSCB Schools Liaison Officer

The Immortal Life of Henrietta Lacks

REBECCA SKLOOT

I write this as a former user. I've spent hours sweating over them, scraping them, poking them with a sharp needle, synchronizing them, transfecting them or pulverising them. Only to watch them in greys or green and red, oscillating and quivering, wrenching and dividing, often dying. I've pickled a few billion in my time: stained them multi-coloured, scrutinized them, photographed them and measured them. They grow fast and incredibly easily. We call them weeds, but these are HeLa cells and they have served me well. I, like countless others, have learned much from these cancerous critters.

So last September when I read the email from a graduate assistant working for an unknown US academic by the name of Rebecca Skloot (Google soon revealed her as a blogger too no less), asking for permission to use one of my HeLa cell images in a forthcoming book, I was interested, flattered, intrigued and I agreed. I "donated" it in exchange for a copy of the book, not wanting to take money from the author's personal pocket – that would be exploitation, the significance of which becomes apparent later. The book was about the life and death of Henrietta Lacks and the cancer cells she begat unknowingly to the world of science over half a century ago, which – in some shape or form – are still growing to this day around the globe. The book recently appears to have caught the imagination of the public, in a way I would not have predicted. The author and the book have appeared in the media around the planet: watch out for Hello! The HeLa Edition! But the story she tells is so far from the American Dream: it's one of poverty, of unmarked graves, of an sick underclass with no access to health care, a lost, forgotten and exploited population. It's not clear whether this story

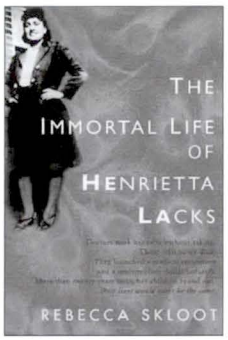
has a happy ending at all.

I'm sure most people now know the basic story. Henrietta, a vivacious black woman from a tobacco-picking Virginian family who tried to escape the terrible poverty, married her cousin, moved to Baltimore to have a large family, nothing particularly unusual there. It was 1951, and at a mere 31 years old, she died in a "coloured" ward in Johns Hopkins Hospital. People did. She died after a protracted illness, from an aggressive and unusual cervical cancer that spread and ultimately consumed her, not before a biopsy was removed and placed in an experimental cocktail that the scientists hoped would allow the cells to multiply. Most similar attempts using other patient's samples had failed, but Henrietta cells were different. They flourished beyond the wildest expectations of the researchers. So much so that as soon as you could say exploitation they were being shipped around the world and profits made. As the press release from Johns Hopkins earlier this year confirms, of course these were different times and the consent law surrounding patient material is now always adhered to.

The book describes the author's persistent attempts to break through the Lackses self-protective barriers, constructed after the family realized, in the 1970s, the extent of HeLa use and then had a futile struggle to get recognition. It details not only these battles, but also those the family have had with illness and poverty in the intervening years – a sorry tale indeed. But it isn't all doom and gloom: the section where the family meets the enthusiastic and honest Christoph Lengauer, a well-known cancer researcher, is encouraging and heart-warming. Clearly HeLa cells were a breakthrough with their unusual propensity for self-reliant growth. They have enabled a range of problems in science to be examined, from the applied (growing virus for vaccination) to the basic (mechanisms underlying cell division), but maybe their impact on cancer research per se is over-estimated. HeLas are weird cells that have no doubt morphed into myriad new daughters-of-HeLa since it was first plucked from inside poor Henrietta Lacks. So they have their place in history but can they help us understand the complexity of real cancer cell behaviour?

Overall the book is a fascinating and largely entertaining read, despite being something of a crusade to right a perceived great injustice. For me it's a little too journalistic and, not surprisingly as a British reader, jarringly American in phraseology - but once you have "gotten over" that aspect the author does engage you with her dogged enthusiasm and quite a heavy dose of bravery in trying to turn round the opinions of a broken and embittered extended family. You genuinely feel the passion she has to tell the human-interest story and give due credit to Henrietta's unknowing contribution to biological research. Skloot perhaps gets too close, too intimately attached to the family – in a worrying way she is infected with the weird and wonderful other-worldly superstitions of Henrietta's daughter Deborah – but her interpretations of the historical descriptions of Henrietta's life and ultimately her death are at once evocative and quite moving. Like a lot of "creative non-fiction" some details are too heavily laid on, and you don't know to what extent it paints an accurate picture of the life of the Lackses in the distant past or even the present. Skloot herself could be criticized for weaving herself into the tapestry of the story too much, becoming almost a principal character in the drama, but HeLa and Henrietta's legacy has been her personal obsession for over a decade, so who can blame her. The nine pages of indulgent acknowledgements are revealing. Parenthetically, I couldn't help being a little miffed by the lack of thanks for the three image contributors – made even worse by a request by the publisher recently to use my image in the press releases associated with the major book tour. But that, on reflection, is beautiful irony. As a former user, now in the other ethical hot bed of embryonic stem cell research, I wish the Lacks family well. I hope the Henrietta Lack Scholarship Fund, which is due to receive a "portion" of the profits from the book, does some good for the people who need it most.

Paul Andrews, Drug Discovery Unit, University of Dundee.



The Immortal Life of Henrietta Lacks
By Rebecca Skloot
(Crown/Random House)

Cell Biology

G. KARP

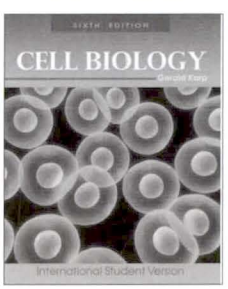
As with previous editions of the popular textbook 'Cell Biology', this latest version aims to bridge the gap between scientific principle and experimentation, whilst appealing to students taking an introductory course in cell biology. The author achieves this by exploring and discussing the experimental approach and techniques used to determine the relevant biological concepts. Moreover, Karp tries to link key biological findings to human disease and treatment; in particular, the inclusion of information boxes dedicated to human perspectives serves to further aid students in this process. Another key feature of the text is the inclusion of numerous detailed, clear schematics, further facilitating the explanation of the biological mechanisms in question. Furthermore, these schematics are often supplemented by images and tables in the text or by movies that can be viewed online.

The content throughout the text is clearly presented in 18 well-structured sections. The first 17 chapters cover key principles of cell biology, from basic cell properties to more complex topics, such as cell signaling and immune cell activity. Additionally, the chapter structure contains review sections to continually assess subject understanding, and concludes with a synopsis containing the key points as well as a list of useful references of relatively current literature for more detailed further study if required. Particularly noteworthy though is the final chapter, which concentrates on 'Methods in Cell Biology'. This chapter not only explains the fundamentals of molecular techniques and the use of specific pieces of laboratory equipment, but applies the basic science of previous chapters to explain current experimental techniques.

In comparison to the 5th edition, the text has been completely updated to include more information on recent advances, such as RNA silencing and fluorescence imaging. Furthermore, many of the diagrams have been re-worked, updated or completely replaced by new schematics. In general, these changes have resulted in a text that is clearly written, with a logical progression of the themes throughout each chapter. The author also achieves a good balance between text and diagrams; the chapters do not appear to be overladen with text, but do offer relatively comprehensive detail on topics of increasing complexity. However, a minority of the schematics, especially in later chapters, could be considered too complicated for this level of study.

Thus, 'Cell Biology' is a good quality textbook, which is ideal for students in their earlier years at university who would benefit from the clear explanation and presentation that this text provides. The inclusion of some experimental data also makes it an excellent base for students to start perusing the scientific literature themselves, and moreover would also be beneficial as a starting point for scientists delving into new areas of this subject.

Kiri Tan and Philippa Tucker, Department of Biology and Biochemistry, University of Bath



Cell Biology
G. Karp,
6th Ed. International Student Version.
Singapore: John Wiley and Sons.

Meeting Reports

7th International Meeting on Yeast Apoptosis (IMYA)

9–13 September 2009. Graz, Austria

Aside from the wonderful city of Graz exceeding all expectations, the series of talks on fungal programmed cell death at the 2009 IMYA strongly reaffirmed the field as one with significant potential.

The meeting attracted a plethora of scientists from around the globe, and although the meetings previous incarnations had initially attracted a small community of yeast biologists it now has expanded to include other fungal models, as well as catching the attention of biologists using higher eukaryotic models. This was demonstrated comprehensively by the opening speaker, Guido Kroemer (INSERM, France) who is one of the most cited and most accomplished researchers working in the field of programmed cell death (PCD) and autophagy. His fascinating talk on the evolution of PCD from lower eukaryotes, through the altered utilisation of stress response mechanisms in killing individuals, to the benefit of a microbial population, and leading to the already established modes of apoptosis in higher eukaryotes was educational and entertaining. Moreover, he touched upon the emerging concepts in the PCD field, such as the importance of mitochondria and their role in facilitating a controlled way in which to destroy individual cells. He also stressed the importance of model systems such as yeasts in the study of PCD, that are contributing to both our understanding of the mechanisms governing apoptosis in higher organisms, as well as adding insight to the evolutionarily conserved components of PCD.

The first few sessions of the meeting focused on cell death pathways in various yeast models. Bing Zhou (Tsinghua University, Beijing, China), spoke about his groups work in identifying genes involved in copper induced cell death in *S. cerevisiae*. Patrick Rockenfeller (University of Graz, Austria) then presented his work on lipid induced cell death in yeast. This has particular interest as lipotoxicity has a major part in problems generated by obesity in the developed world. Manuela Corte-Real (University of Minho, Braga, Portugal) delivered a fine example of expression of human proteins within a yeast system. Her group has expressed Bax and PKC in yeast and she presented data that PKC can modulate both Bax translocation to the mitochondria and cell death. Reiko Ikeda (Meiji Pharmaceutical University, Tokyo, Japan) presented work that highlights another reason why cell death pathways are studied in yeast, which was with regards to examining microbial interactions and outcomes. Reiko presented data on how *Staphylococcus aureus* attachment on the surface of *Cryptococcus neoformans* can induce a form of PCD via the mitochondria.

The next cell death pathway sessions focused on various inherent yeast PCD mechanisms. Paula Ludovico (University of Minho, Braga, Portugal) presented her data on how the *S. cerevisiae* Glyceraldehyde-3-phosphate dehydrogenase (GAPDH) and aconitase are degradation targets of the yeast metacaspase Yca1p, which is likely to connect the disruption of metabolic pathways to the overall PCD process. This theme was further expanded by Sergio Gianattasio (CNR, Bari, Italy), as he spoke about the overall molecular mechanisms involved in acetic acid induced PCD in *S. cerevisiae* and how his data suggests that there are two divergent PCD pathways, one Yca1p dependent and one independent. Continuing with the PCD pathways theme, Christina Mazzoni (University of Rome, La Sapienza, Italy) presented her groups data on regulatory mRNA degradation and how disruption of the degradation mechanism components can affect the health of cells and lead to premature ageing and PCD. A notable observation by Christina was that many of the proteins in these pathways are conserved up to humans. Maria Joao Sousa (University of Minho, Braga, Portugal) talked about her work on ammonium induced cell death in *S. cerevisiae*, and how this work is important for modeling PCD caused by hyperammonemia, a condition that occurs in various human disorders.

Whilst still focusing on yeast, Ying Ying Cao (Second Military Medical University, Shanghai, China) managed to mix it up a little by presenting her data on the *C. albicans* PCD pathway and specifically the metacaspase homologue CaMCA1p and how it modulates cell death under conditions of oxidative stress.

In the next few sessions the talks were focused on the relationship between cellular ageing and death, and how this is modeled in various fungi. Michael Breitenbach (University of Salzburg, Austria) presented his groups work on characterizing a newly identified superoxide-generating NADPH oxidase. Nox1, as they named it, appears to localize in the ER. Next up, Valter Longo (University of Southern California, LA, USA) proceeded to talk about his work on sch9, the yeast homologue of the human Akt and S6K proto-oncogenes, and how it promotes age dependent DNA damage and genomic instability through superoxide damage. The rather interesting properties of spermidine in aging cells were presented by Tobias Eisenberg (University of Graz, Austria) who pointed out that application of the aforementioned polyamine to aging cells promotes

autophagy and suppresses oxidative stress by protecting certain genes from strong deacetylation and allowing their transcription. Genomic stability was the theme of the next talk as well, as Bill Burhans (Park Cancer Institute, Buffalo, USA) delved into the effects of oxidative and replication stress in yeast chronological aging models and how they are induced by various cellular growth signals such as pH and high glucose. Heinz Osiewacz (J.W.Goethe University, Frankfurt, Germany) showed that the aging models are not just restricted to yeast by presenting his work on the filamentous fungi *Podospora anserina*. His research in elucidating the pathways involved in PCD on this well characterized organism, has established this as a good system in which to study age related PCD. Harald Klinger (University of Salzburg, Austria) focused his talk on a novel anti-apoptotic protein in yeast, Mmi1p, which is a homologue of human TCTP and has been shown to translocate to mitochondria under certain stress conditions.

Following on with the aging and cell death sessions, Alena Pichova (Academy of Sciences, Prague, Czech Republic) provided some interesting insights into the mechanisms behind the spontaneous reversions causing suppression of the oncogenic/aging phenotype seen in yeast mutants expressing the ras2val19 allele. The role of genes skn1 and ipt1 in autophagy and apoptosis, was the point of discussion for Karin Thevissen`s (University of Leuven, Leuven, Belgium) talk, in which she described how the aforementioned genes, which have a putative role in sphingolipid biosynthesis, modulate autophagy and exhibit increased levels of apoptosis. The final talk in this series of age and cell death themed talks was by Zdena Palkova (Charles University in Prague, Czech Republic), which was a fascinating and rare insight into yeast colony development, and more specifically how cells within a solid medium colony require different responses to oxidative stress from cells grown in liquid phase medium.

The next session had as a theme the quirky title of "neurotic yeast", which mainly included work on yeast that might provide an understanding of, and relates to, neurodegenerative diseases. Joris Winderickx (University of Leuven, Leuven, Belgium) gave an impressive presentation on the efforts of his group to use yeast in order to model the early stages in the development of human Tau protein aggregations, which are important indicators of several neurodegenerative diseases including Parkinson's. Very notable was the fact that this work has produced a lot of positive results and promises to generate commercial applications for the early diagnosis of such neurodegenerative diseases. Following this, Ralf Braun (University of Graz, Austria) presented his work on expressing human Tdp-43 protein in aged or stressed yeast. Ralf showed that under stress conditions Tdp-43 aggregates leading to growth impairment of the yeast. On a similar note, albeit an entirely different platform, Marija Cvijovic (Chalmers University of Technology, Göteborg, Sweden) presented the mathematicians approach to modeling protein aggregation accumulation and the rate of their retention by yeast mother cells. However the theoretical modeling was backed up by some practical work where she proved that dysfunctional proteins are retained by mother cells so as to benefit the growing daughter cells and subsequent populations.

The next session, which included my talk, was themed Signal Transduction and was kicked off by my supervisor Campbell Gourlay (Kent Fungal Group, University of Kent, Canterbury, UK) with his talk on actin's role in regulating the Ras/cAMP/PKA signaling pathway and cell death. Campbell`s work has revealed that actin mutations can affect Ras which ultimately affects mitochondrial function, leading to the production of harmful Reactive Oxygen Species (ROS). Sonia Colombo (University of Milano-Bicocca, Milan, Italy) also touched upon Ras, and presented her work on generating a Green Fluorescent Protein (GFP) probe specific for active Ras, which combines the human Raf1-binding domain with GFP. This impressive probe is great for observing the localization of active Ras in real time, and in fact I have been lucky enough to use this in my work as well. My presentation (Vassilios Kotiadis, University of Kent) was in this session too, and for it I presented my data on the effect functional residue mutations on the surface of the actin binding protein cofilin have on mitochondrial function, leading to altered respiration rates and levels of ROS depending on the mutations.

On the last day of the conference there were still several very interesting talks by some very accomplished scientists. This was evident as the day`s events in the humanizes yeast models session were kicked off by Marie Hardwick (Johns Hopkins University, Baltimore, USA) who delivered a great talk where she presented the results of an impressive screen her lab has undertaken on characterizing the Yeast Knockout collection strains (~5000 strains) with regards to conditions relating to mammalian programmed cell death. From this she revealed how a large number of mutants exhibited a similar phenotype, which was eventually put down to a secondary mutation in the nutrient sensing related whi2 gene. This might initially sound like trouble for other researchers in similar situations that may have wrongly characterized phenotypes as deriving from certain genes; however, Marie explained how such mutations are also common in mammalian cancerous systems and thus indicating that yeast models can be used as models in understanding cancer. The next talk was equally impressive, and Richard Zhao (University of Maryland School of Medicine, USA) presented his work on developing a model system of testing HIV protease inhibitors in *S. pombe* cells. This rather ingenious and novel method for screening anti-retroviral drugs holds the potential to provide serious advancement in the deployment of medication in this field, and combat situations where multidrug resistance of HIV-proteases hampers efforts to alleviate the onset of AIDS. Another interesting example of humanizing yeast models was presented by Renata Santos (Institut Jacques Monod, France), with her work focusing on studying the mitochondrial protein Frataxin whose deficiency in yeast cells leads to similar phenotypes as in human cell systems.

The concluding session of the conference was about inducers of apoptosis and oxidative stress in yeast. Zhaojie Zhang (University of Wyoming, USA) had some rather interesting findings in his talk about cell cycle regulation and apoptosis. His groups work has generated data suggesting that certain cell cycle regulating factors in *S. cerevisiae*, like anaphase promoting complex (APC), can in fact lead to the initiation of a programmed cell death cascade when the cell cycle is disrupted. Following up Ida van der Klei (University of Groningen, The Netherlands) presented work on a different yeast model system, Hanensula polymorpha, whose enhanced peroxisomes make them ideal organisms to study these organelles. Ana Kitanovic (University of Heidelberg, Germany) presented an impressive array of data generated by an automated system she has developed for observing changes in growth rate and maximal biomass yield in yeast strains grown with varying culture conditions and apoptotic stimuli. What is rather important about such work is the vast amount of detailed data that can be generated with minimum effort with the use of such systems. Last but not least, Fedor Severin (Moscow State University, Russia) had some interesting observations deriving from his work on ROS production and DNA damage. He suggested that the ROS release that is observed in yeast cells subsequent to induced DNA damage is actually initially a signal for DNA repair and cell defense mechanisms.

The meeting was now over, but I didn't leave the occasion empty handed. Apart from the immense deposit of information to my knowledge bank, the organizers were successful in making mine, and I strongly believe the rest of the attendees' time in their lovely city of Graz massively entertaining. A prime example of combining the exchange of information between fellow scientists, with the finer pleasures in life.

Vassilios Kotiadis, University of Kent

The 54th Annual Meeting of the Biophysical Society

20–24 February 2010. San Francisco, USA

The Biophysical Society meeting is one of the most important annual conferences in the biological and medical sciences field. This year, the 54th annual meeting took place in San Francisco and was hosted at the Moscone Convention Center.

The conference included 21 symposia, 3 mini symposia, 62 platform sessions, 5 workshops and 4 poster sessions with more than 3500 presentations. It provided a wide range of topics, including: bioenergetics, membrane biophysics, membrane structure and assembly, biological fluorescence, intrinsically disordered proteins, exocytosis & endocytosis and permeation and transport. Because of the large number of lectures and platforms, we have focused this report only on the talks which were important for our research – the structural and functional studies of Ion Channels.

On the first day of the meeting, one of the talks which received significant attention was presented by Dr Daniel Minor (University of California, San Francisco). He presented his work on structural studies of voltage-gated potassium channels using integrated biophysical approaches, including new screening methods for probing the functions of biological molecules and for developing novel agents to control channel activity. On the second day, Dr Gregory Voth (University of Utah, Salt Lake City) presented a model of proton transport through channels using multi-scale computer simulation methodology. He developed this model based on the unique electrostatics involved in channel proton transport and its effect on selectivity properties. The development of new techniques to study channel activity and interactions is a common purpose that interests different experts in biophysics. A new approach to understanding the role and the behaviour of membrane channels was presented by Dr. Sophie Aimon (Institut Curie, Paris, France) during the Membrane Protein Functions platform. She has developed a method to produce giant uni-lamellar vesicles (GUVs) containing KvAP, a bacterial voltage-gated potassium channel. Using this model system, the effects of the physical parameters of the membrane on channel behaviour can be assessed together with a detailed functional characterization of the ion channel. On the fourth day, substantial attention was paid to the TRP (transient receptor potential) channels, which are involved in calcium signalling and homeostasis in every cell type. The multimodal gating and the activation mechanisms of these channels are poorly understood. In her talk, Dr Rachelle Gaudet (Harvard University, Cambridge, USA) described the unique sensitivity of TRPV channels which are the key receptors involved in pain, thermosensation, mechanosensation and calcium homeostasis. Her results show that the N-terminal ankyrin repeat domain of TRPV1, TRPV2 and TRPV4 binds to nucleotides and calmodulin and modulates channel sensitivity to heat and capsaicin.

And for an 'Ion Channels' group like ours, what could be better than listening to the Nobel Prize in Chemistry Dr Roderick MacKinnon (Rockefeller University, New York), and Dr Francisco Bezanilla (University of Chicago, Chicago) presenting their contrasting ideas on the mechanisms of electromechanical coupling in voltage-gated ion channels? This was the final lecture of the conference and one of the most popular as evident from the over-crowded conference room.

This meeting was the very first conference that we have attended since starting our PhDs and it gave us a great opportunity to present our data and receive interesting feedback from the leaders in our field. We both presented posters during the 'Ryanodine Receptor I' session. We didn't stop talking through our results to all the comers and we really enjoyed the positive and challenging atmosphere that sent us back to Bristol University with plenty of new experimental ideas.

These key meetings are crucial; they provide the opportunity to interact with other scientists, to develop new ideas and to keep abreast of the newest and most exciting research.

Elisa Venturi and Elena Galfre
School of Physiology and Pharmacology, University of Bristol

Keystone Symposia on 'Cilia, Signaling and Human Disease'

21–26 February, 2010. Monterey, California, USA

Eukaryotic cilia are microtubule projections from cells involved in multiple processes, ranging from motility to sensory perception. In recent years many studies have shown a direct link between mutations in genes encoding ciliary-proteins and human diseases. Over 300 scientists gathered together for the first Keystone Symposia on Cilia, Signaling and Human Disease to discuss recent research into ciliary development in the light of disease.

Organised by Tim Stearns (Stanford University, USA) and Peter Jackson (Genentech Inc., USA) the meeting acted as a forum focusing on how signalling is organised within cilia including the cell biology and molecular genetics of diseases caused by defects in cilia (ciliopathies), and the biology of ciliated tissues including morphogen pathways, tissue repair and links to cell cycle or tumour suppressor control.

The meeting was opened with an excellent morning concentrating on the cell biology of cilia and intraflagellar transport, and included highlights such as electron-micrographs of intraflagellar transport in Chlamydomonas by Joel Rosenbaum (Yale University, USA), the kinesin motors which drive this transport in C. elegans by Jonathan Scholey (University of California, Davis, USA) and the exciting role of GEF proteins and the Rab cascade in the primary cilium membrane. George B. Whitman (University of Massachusetts Medical School, USA) described the importance of the ciliopathy linked Bardet-Biedl Syndrome proteins in *Chlamydomonas phototaxis*, while Gregory Pazour (also of University of Massachusetts Medical School, USA) demonstrated ciliary targeting domains and complexes with the key protein IFT20.

This morning session was then followed by an extended opportunity to view the posters to be discussed after the evening's plenary. The evening's plenary session focused on the group of ciliopathies Bardet-Bield Syndrome, Alstrom Syndrome and Obesity Syndrome, which can share mutations in the same gene networks. This was followed by the first poster session discussion. The excellent arrangement of having already viewed the posters allowed everyone to have longer talks with the authors and encouraged group discussion - which included discussion of more than one poster where the research overlapped.

The second day began in a similar manner, with an excellent morning session focusing on morphogen pathways and cilia. The afternoon then provided a similar focus to Day 1, with an extended opportunity to view poster session two. The evening plenary session then featured an insightful talk by Kathryn V. Anderson (Memorial Sloan-Kettering Cancer Center, USA), on hedgehog signalling in mouse cilia, and was followed by discussions on the second poster session.

The third day took on the topic of sensory events in cilia and how defects in cilia affect kidney development, resulting in cysts and cystic diseases. A wide range of disorders and species were covered, from *C. elegans* by Jeremy F. Reiter (University of California, San Francisco, USA) to the complex protein networks of Nephronophthisis-like ciliopathies being elucidated by Peter K. Jackson (Genentech, Inc., USA).

The final day involved a morning plenary session on the cell cycle, tumour suppressors and cancer, while the afternoon allowed for workshops involving many short talks on wide-ranging subjects. The evening aptly focused on the evolution of cilia along with an elegant summary of the proceedings by Nicholas Katsanis (John Hopkins School of Medicine, USA).

Overall, the conference was a major success, with excellent quality of talks, exceptional organisation, and friendly atmosphere conducive to discussion on current research. I would like to thank the BSCB for their generous award of the Honor Fell Travel grant, which allowed me to attend this very useful meeting.

Matthew Hodges
Dept. Pathology, Plant Sciences, & Zoology
University of Oxford

Overleaf is a photocopy of orig'al. David Archer wanted to retain original

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BSCB
BRITISH SOCIETY FOR CELL BIOLOGY

UNIVERSITY OF CAMBRIDGE

British Society for Cell Biology and Cambridge Institute for Medical Research have teamed up to provide CELLpics as part of their Public Engagement and Outreach work.

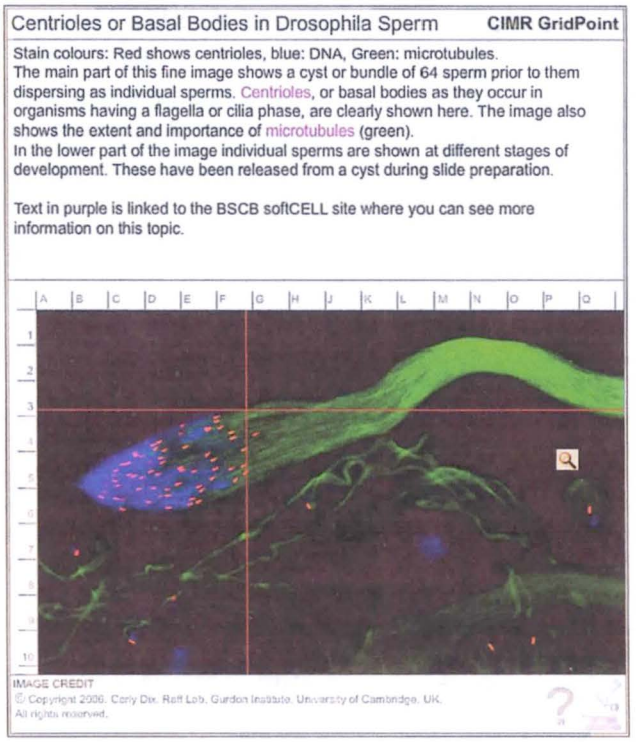
CELLpics

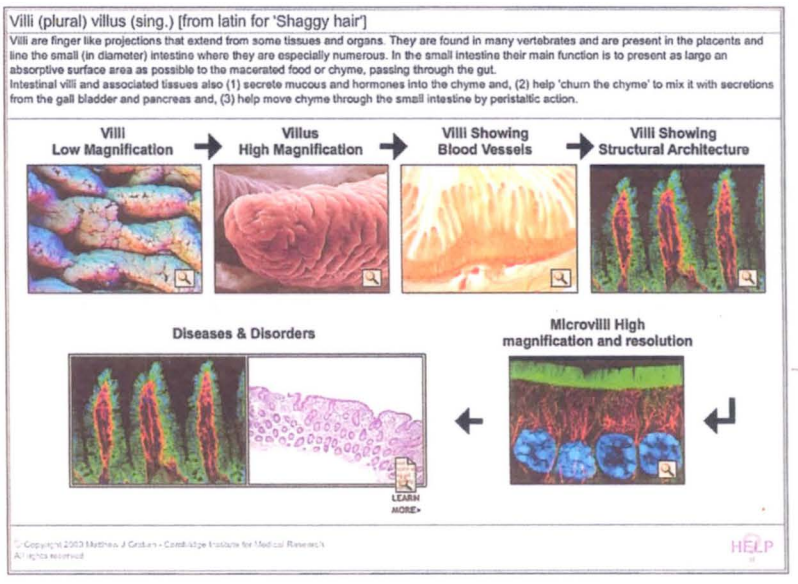
What is CELLpics?

CELLpics provides interpreted research level images about selected topics in cell biology . Single images and charts are interpreted using (1) GridPoint, a mouse controlled cross-hairs device. GridPoint uses alpha numeric axes to define locations, (2) interaction and magnification, (3) pop-up notes and video clips.
Many of the images have been supplied by Wellcome Images and BSCB members.

Who is CELLpics for?

CELLpics is currently used by teachers and students in schools studying 'A' level biology or equivalent and first year college and university students. It has been selected for inclusion in the following specialist sites: 'Intute-best of the web' (the portal site of JISC, the British Universities Joint Information Services Committee), ROUTES: the specialist website of the Open University, Schoolscience.co.uk, (part of the UK Association for Science Education, in the UK), www.biology4all.com. Topics have also been translated into Norwegian for their National Digital Learning Arena (NDLA). CELLpics is also likely to be used by sister organisations in Australia and New Zealand and in Singapore.





Visit http://cellpics.cimr.cam.ac.uk

Which topics are covered?

Topics include: Centrioles, Cytoskeleton, Endoplasmic reticulum, Golgi, Induced Pluripotent Stem Cells, Lysosomes, Mitochondrion, Mitosis, Nuclear envelope, Research microscopes, Ribosomes, Somatic Cell Nuclear Transfer, and Villi (intestinal), and more to come.

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an advert (in colour)

Keystone Symposia: Lymphocyte Activation and Gene Expression

27 February – 4 March 2010. Breckenridge, Colorado, USA

At 3km above sea level, the historic town of Breckenridge played host to this year's 'Lymphocyte Activation and Gene Expression' Keystone Symposium. This meeting brought together over 200 scientists to Colorado's oldest town, which was founded in 1859.

Organised by Leslie Berg (University of Massachusetts Medical Centre, USA), Lawrence Samelson (NIH, USA) and Facundo Batista (London Research Institute, UK) this meeting covered a diverse range of topics within the field while still exploring the basic questions, which continue to be enigmatic. These included how antigen receptors initiate the activation process, how changes in downstream signalling pathways and the cytoskeleton are effected by lymphocyte activation and how chromatin remodelling and transcriptional regulation determine gene expression.

The meeting commenced on Saturday evening with the keynote address from Professor Mark Davis (Stanford University, USA) who, along with Stephen Hedrick, was the first to identify the cDNA clone encoding the T cell receptor chain in 1984. This was followed by a social hour which provided us all with a chance to acclimatise to the high altitude of Breckenridge!

The first session the following day focused on the initiation of antigen receptor signalling and Phillip Anton van der Merwe (University of Oxford) discussed the controversial topic of T cell receptor (TCR) triggering. This is the mechanism by which the interaction between the TCR and the antigen presenting cell (APC) leads to increased phosphorylation of the CD3 subunits of the TCR. Three models for TCR triggering exist and they either involve aggregation, conformational change, or segregation of the TCR. The Van der Merwe lab focuses on the latter, this kinetic segregation model describes a situation where a 'close-contact zone' is created between the TCR and APC which is a region of stable phosphorylation. This region surrounding the TCR/CD3 is enriched with kinases such as Lck, but because of their larger respective ectodomains, phosphatases such as CD45 are excluded from this close contact zone creating an environment which favours phosphorylation events. The group is now interested in the mechanism of triggering in natural killer (NK) cells.

In the second plenary section which focused on the cell biology of lymphocyte activation, Gillian Griffiths (Cambridge Institute for Medical Research) focused on a different population of T cells, the cytotoxic T lymphocytes (CTLs). She described how CTLs release lytic granules containing perforin and granzymes to destroy targets cells. She described a huge reorganisation of the cytoskeleton and the secretory machinery which occurs upon the ligation of the CTL receptor and APC. This leads to the microtubule network becoming polarized towards the interface between the TCR and APC, the immunological synapse (IS), causing the lytic granules to migrate along the microtubules towards the centrosome where they dock at the plasma membrane and release their contents. She described how her group monitored IS formation and polarization of the centrosome and lytic granules in OT-I mice, which are transgenic for a TCR that recognizes the ovalbumin peptide. By substituting the OVA257-264 peptide for the altered peptide ligand G4 which has a lower affinity for the OT-I receptor, they monitored target cell death.

Overall they found that both strong and weak signals can cause polarisation towards the IS, but a higher threshold of signalling is needed for the migration of the lytic granules and target cell killing, this Professor Griffiths termed a 'two-tier system'.

One of many talks which I enjoyed was given by Matthew Krummel (University of California, USA) who demonstrated the movement of single T cells in a short movie. He described two modes of T cell movement the first he termed 'walking' and the second 'sliding'. Krummel explained how the regulation of MyosinIIA in T cells affects the cell/surface contact zone which leads to these two distinct types of movement. The movie demonstrated how microchannels were used *in vitro* to study the 3D motility of T cells, the microchannels differed in size and the degree of constriction influenced the speed in which the T cells migrated down the channel.

This conference highlighted the continued development of the lymphocyte signalling field through the application of novel imaging techniques; one such technique mentioned by many was total internal reflection fluorescence (TIRF) microscopy. TIRF microscopy is ideally suited for studying protein dynamics on or in close proximity to the plasma membrane because only fluorophores within approximately 100nm of the specimen/interface are excited. Facundo Batista (London Research Institute) visualised single components of the B cell receptor (BCR) by using dual-view TIRF microscopy. His lab tracked single particles of the BCR together with components of the cytoskeleton in B cells and showed that BCR diffusion is restricted in actin rich regions and that the membrane-cytoskeleton linker protein ezrin regulated BCR diffusion. Dr Batista then described how disrupting the cytoskeleton by targeting actin with cytochalasin B was sufficient to induce BCR signalling as if the BCR itself was stimulated. Together the data presented implicates the actin cytoskeleton in regulating BCR dynamics.

With three sessions at this meeting dedicated to the downstream pathways of antigen receptor signalling, there was an emphasis on the importance of understanding the basic signalling in immune cells. To untangle these pathways many researchers described their use of mouse models, but Arthur Weiss (University of California, USA) described a novel 'chemical-genetic' approach to elucidate aspects of signalling. ZAP-70 is a tyrosine kinase and a key player in initiating signalling from the TCR following engagement to an APC. Unsurprisingly ZAP-70 deficiency has been linked to many diseases which affect the immune system and is therefore a therapeutic target. But so far successful pharmological inhibitors that specifically target ZAP-70 have yet to be designed, which led Arthur Weiss and his group to develop a ZAP-70 inhibitor system. He described how most kinase inhibitors, such as PP1 target ATP binding, so they took advantage of this by mutating the bulky 'gate-keeper' residue which lies in the ATP binding pocket of ZAP-70 to a smaller residue. Therefore by using a larger analog of an inhibitor such as PP1, they created an analog-sensitive mutant, ZAP-70AS, which has a binding pocket large enough to accommodate this inhibitor. Downstream signalling was effected in cells expressing the ZAP-70AS when the PP1 inhibitor was added allowing the temporal requirements for the kinase activity of Zap-70 to be monitored.

I hope this provides a flavour of all the high quality talks that I was lucky enough to hear and I have not even touched upon the many posters I saw which gave graduate students such as myself an opportunity to discuss our research with the 'Gods' of our field. Some great science combined with some great snow made this conference truly memorable. I am grateful to the University of Nottingham's Graduate School and to the BSCB for the Honor Fell Travel Award which enabled me to attend this conference.

Fiona Hey
Institute of Genetics, University of Nottingham

NGF 2010, 'Neurotrophic factors in health and disease'

10–13 June, 2010. Helsinki, Finland

The 10th international conference on Nerve Growth Factor (NGF), and related neurotrophic factors, took place at the Rantapuisto Conference Hotel in a beautiful setting outside of Helsinki.

Since the first international NGF meeting held in 1986 in Monterey, California, this series has continued nearly every 2-3 years in different countries. This year's conference, in Helsinki, attracted 160 scientists from all over the world to present and discuss their recent findings.

Lamberto Maffei (Scuola Normale Superiore, Pisa, Italy) was the keynote speaker and gave an overview of his research in recovering adult visual brain functions after monocular deprivation. His group showed that environmental enrichment promotes vision recovery of adult amblyopic animals and that these animals also show increased expression of brain-derived neurotrophic factor (BDNF) in the visual cortex, revealing the fact that BDNF is one of the crucial factors that underlie environmental enrichment effects on primary visual cortex maturation.

Enrico Tongiorgi (University of Trieste, Italy) gave an interesting talk about the complex situation of BDNF transcript trafficking into dendrites. BDNF is encoded by multiple transcripts, which are produced by alternative splicing of nine different 5'UTR exons and two different 3'UTR exons. He showed data which propose a new model in which the dendritic trafficking of the transcript is mediated by three different kinds of signal: first, the 5'UTR exons contain the information for the transcript selectivity, with transcripts possessing exon 2 or 3 getting transported upon stimulation, while transcripts with exon 1 or 4 stay in the soma; second, the coding sequence contains a constitutively active dendritic targeting signal that is suppressed in transcripts containing the 5'UTR exons 1 or 4; and third, the two different 3'UTR exons contain inducible targeting signals with the short 3'UTR transcript transported to dendrites after Neurotrophin 3 stimulation, while dendritic targeting of the long 3'UTR transcript is induced by BDNF.

The second day of the conference started with a talk from my supervisor Antonella Riccio (MRC Laboratory for Molecular Cell Biology, London) who presented work from our lab regarding epigenetic mechanisms during neuronal development. BDNF triggers S-nitrosylation of histone deacetylase 2 (HDAC2) in neurons, which promotes the release of HDAC2 from chromatin and therewith increases histone acetylation of neurotrophin-dependent gene promoters and activates transcription of genes associated with neuronal development. New findings in the lab suggest that HDAC2 is associated with the nucleosome remodeling and histone deacetylase complex (NuRD) in neurons and that there is a developmental switch of the complexes' subunits, allowing a differential transcriptional regulation during neuronal development.

In the following session, Liliana Minichiello (University of Edinburgh) addressed the role of NGF and its receptor TrkA in the late onset of Alzheimer's disease. Brains of AD patients show a decreased TrkA expression and a deregulated NGF expression. By generating and comparing a TrkA knockout and NGF knockout mouse model, Liliana showed that they both have a 40% loss in cholinergic neurons, but only the TrkA knockout mouse shows AD signs, such as impaired visual object recognition, increased β-Secretase expression and Aβ fragmentation within 20 months of age. She concludes that this difference is probably due to effects of pro-NGF and p75 in these mouse models.

On the third day, Freda Miller (The Hospital for Sick Children, Toronto, Canada) presented data showing that axon degeneration of adult axons occurs through a p75 neurotrophin receptor (p75NTR)- and myelin-dependent mechanism. Myelin contains several growth-inhibitory molecules including Nogo. To mediate the inhibitory growth signaling, the Nogo receptor needs p75NTR as a co-receptor. Freda Miller showed that the downstream signaling of myelin and p75NTR involves the c-Jun N-terminal kinase (JNK), resulting in caspase-3 activation in cell bodies and caspase-6 activation in axons and therewith introducing axonal degeneration.

The last talk I would like to mention was by Marco Canossa (University of Bologna, Italy) about a role of p75NTR in axon and dendrite specification. His data showed that p75NTR is asymmetrically expressed in one neurite in the first 72 hours after plating of hippocampal neurons and that this correlates with the neurites' axonal identity. He further showed that BDNF promotes the expression of p75NTR in one specific neurite and that there is a direct association between p75NTR and the Par3 complex upon BDNF stimulation.

I presented a poster on the post-transcriptional regulation of mRNA targeting and stability in sympathetic neuron axons. At the beginning of my PhD project, I conducted a genome-wide analysis of transcripts localized to axons versus cell bodies in neurotrophin-stimulated neurons. The analysis has revealed that there are hundreds of transcripts specifically targeted to axons and that Neurotrophin 3- stimulated axons contain more RNA than axons stimulated with NGF. We propose that the different neurotrophin stimulations could result in different untranslated region (UTRs) expression, containing different signals and therefore enabling distinct regulation of transcript targeting and stability following neurotrophin stimulation. I had interesting feedback and discussions during the poster session and overall enjoyed the meeting with its great talks a lot.

I would like to thank the BSCB for the Honor Fell Travel Award that enabled me to attend this important meeting.

Carola Zimmermann
MRC Laboratory for Molecular Cell Biology

Hello from your BSCB PhD representative!

Jay Stone

Some of you may be aware that Veronika Ganeva has now stepped down as the BSCB student representative. She did a fantastic job and I would like to thank her for her help in making me feel comfortable taking on the position myself.

So let me introduce myself: my name is Jay. I am a second year PhD student at the UCL Institute of Ophthalmology, working on retinal vascular remodelling and angiogenesis. I have become somewhat of a regular contributor to the BSCB newsletter, writing articles that cover student related issues since Autumn 2008.

I have a keen interest in science communication and believe that as scientists it is vital for us to be able to explain our work to everyone no matter what their level of subject knowledge.

I will be taking on the duties of organising student workshops, symposia and social evenings at the BSCB conferences. I will also be attending the agenda meetings with the BSCB committee.

I feel that my job as your student representative is to be here to listen to you and to help you if I can. Over a third of BSCB members are students / early career researchers so if you have any issues you think should be raised in a committee meeting or ideas for how the BSCB should deal with student memberships then let me know. Similarly, if you're keen to help organise a student evening/event at a BSCB conference then drop me a line. If you are passionate about something and want to write, blog or find some other way to express your views upon it then get in touch and I will try to help you directly or at least give you resources to find someone else who can. I really think being a part of such a large society like the BSCB could open up so many doors and present endless opportunites if you are willing to throw yourself into it so let me know if you are!

I would also like to invite you all to join the BSCB Facebook

group where you can post your ideas, comments and discussion topics for everyone to see and get in on. Currently we have 129 members, lets see if we can reach 500 by the end of the year!

Getting that Red Bull Effect

Jay Stone

Now don't get me wrong, I love science and I am enjoying my project, but over an average week in the lab I estimate I spend 30% of my time worrying I've done my experiments wrong, 15% thinking they were fine but somehow I have analysed the results incorrectly, 25% consumed with the idea that I'm not working hard enough, 20% stipulating what I could have done better and 10% hungry because I have missed lunch yet again. In fact, all too often I am woken by the unwelcome tones of my morning alarm and wish I could stay in a dream world where all scientific dilemmas and futile experiments are a million miles away!

If you find yourself sharing these characteristics, don't worry, you and I are not alone, in fact far from it! After speaking to my fellow PhD students, surrounding post docs and many lab heads, I have come to realise that everyone suffers from the perils of the transient ups and downs of academic research. So what can we do to help ourselves and each other get through these dips in lab morale? How can we work to turn those frowns upside down?

Different approaches appear to work for different people so I am going to attempt to list a few tried and tested methods that have been recommended either to me personally, or I have been told about during my research, into material for this article. I hope that a few or at least one of these suggestions will help you.

(1) Talk things through

Sometimes the 'old fashioned' methods really are the best. If something about your work is getting you down, or something about a personal situation is affecting your work find someone to talk to about it. You might find just venting it all helps immensely or even that your confidant has some useful protocol, technical or life changing suggestions. Obviously it is important in this scenerio that you don't simply dump all of your emotional baggage onto your lab mate and then toddle off as light as a feather leaving them feeling deflated and emotionally downtrodden, but the 'talking things through' concept can work both ways - so you have to be prepared to lend a compassionate ear in return for your fuming time!

(2) Improve your working environment

Are those curtains looking a bit drab? Is the floor so sticky you might lose a shoe? Is that shade of prison grey paint getting you down? It may sound simple, but where you work can have implications for how you feel while working. Now I'm not suggesting everyone should run out to Homebase and buy some wallpaper and begin your own version of Changing Rooms but maybe try brightening up the place with some posters, funny photos of everyone in the lab or even some pot plants?

I have a cartoon drawing that a friend and I had done in New York last year. It hangs on the wall in the office so when I am feeling miserable it serves as a nice reminder that my infected cell culture lines are not the end of the world!

(3) Work as a team

In my opinion, being part of a lab group should be much like being part of a sports team. You are all working towards the same goal of answering questions and publishing papers so you should all feel each others' highs and lows. If someone is doing well and has their paper published, why not go out as a lab for a bite to eat or drinks to celebrate? In my lab, whenever someone publishes we have champagne and then label the bottle with the

persons name, the journal and the date to keep as a reminder of their hard work paying off. Alternatively if someone is not having a great time and has had their paper scooped or problems with getting a protocol to work, why not do something fun as a lab to take their mind off it all. Building a team-like feeling within the group should mean everyone feels better supported. When they experience the inevitable lows they know someone has their back and understands.

One lab in my building has made some game cards of each other giving a geek rating and killer protocol skills; some of you may think 'no way' but it seems fun to me!

(4) Ask for feedback

I think almost everyone has a tendancy to measure themselves by their latest successes or failures; we could produce some fantastic work one week and think we are flying high but then run into problems the following week and sink into thinking we are rubbish at our job. With such delicate self-esteem maybe we should make sure we get positive reinforcement when things are not going to plan?

I have friends who work in IT companies and retail stores: they tell me they have regular review meetings with their managers where they set goals, are told what they are doing right and what they could improve on. This sounds like a useful tool to ensure everyone knows where they stand all the time, whatever their current work situation. Try asking your supervisor or post-doc for regular reviews so you can know where the goalposts are and can feel assurred that they are happy with your progression.

(5) Have a life

Working in research is anything but a 9-5 job; sometimes putting in those extra hours is needed and weekends are useful for spill over experiments. However, try to keep some time for yourself – it is so easy to become immersed in your work and then realise you have not actually seen any of the outside world except the trees and bushes along the bus route between your house and the lab. Some people can work this way, but most of the people I have spoken to said if they were feeling down about their work, burying themselves in it seems to make things a thousand times worse. Instead, take a step back, have a breather, do something fun whatever that might be for you and then come back to your work with renewed energy and enthusiasm to address the problems.

(6) Let off steam

Have your westerns suddenly stopped working? Is your immunostaining showing a different localisation? Are your negative control PCR reactions showing a product band? These are all little problems but if they all happen in the same week it can leave you feeling incredibly frustrated can't it? Well that needs to be dealt with because if it isn't you might find you approach your other experiments half heartedly as you'll assume they wont work either and this is just a waste of time. When asking people how they let off this accumulative work stress I received a whole range of suggestions. Some I expected like 'I go to the gym and do a kick boxing glass' or 'I bash the hell out of my drum kit' others not so expected such as 'I tenderise chicken' or 'I like to rearrange my furniture' and others...well...whatever works for you I guess! 'I like to dress up' and 'I find alphabetising my DVD collection is good for me'.

These suggestions are common sense but maybe it is good to be reminded that there is no need to think you have to hide your frustration and plod along in the futile hope that things will sort themselves out.

To me science is not just a job, it's not just a career, it seems to be more of a personal vocation. We care about our work and are passionate in pursuing new knowledge. After you have completed your PhD you will still have the rest of your scientific career ahead of you. Make sure you know what techniques work for you so you can continue to love research and not end up burning yourself out.

My First Conference

Tom MacVicar

Somewhat naively, I had always pictured myself jetting off to scientific conferences on distant tropical islands with golden sands and fast-flowing cocktails. However, the flip-flops and surfboard stayed at home as we made the short journey to the University of Warwick for the BSCB/BSDB Joint Spring Meeting. Whilst there may have been some mutterings about the cold from international guests, for the most part the rain stayed away and the only blight on an otherwise enjoyable stay was down to a volcano in Iceland...

Having just embarked on my PhD with no presentation or poster to boot, it was easy to blend into the background of the event. Nevertheless, over the four days it became clear why attending these meetings is invaluable for those of us with our feet on the first step of the ladder. Perhaps most valuable for students like myself were the several poster sessions that allowed discussion on peer research in a relaxed, informal environment. With well over a hundred posters on show, you couldn't help but get a good idea for what makes a decent poster and how it should be presented. Plus, unsurprisingly the modern phenomenon of networking becomes a lot easier with a beer in both hands. Of course, in addition to the poster sessions, the main focus of the conference was the talks presented in the main theatre and cinema of the Warwick Arts Centre. The benefits of listening to internationally renowned scientists sharing their latest research are obvious but I was particularly impressed by the high standard of presentations given by post-grads and medical students who presented and received questions with a contagious enthusiasm. Also, from a purely selfish point of view, it was pleasantly surprising to find that even the most apparently irrelevant of talks with respect to my own research could often offer various insightful experimental ideas.

Another pleasant surprise was just how fun it all was. We were well fed (often stuffed) from breakfast to dinner and a daily supply of tea, coffee and cakes, dished out timely kicks up the backside. Come the evenings, a couple of pints in the Dirty Duck put paid to any fatigue and on the last night we were treated to the conference dinner which was to be the scene of numerous crimes against dancing. That said, there were many flashes of flair (and knickers) in the traditional Ceilidh dance before inevitably the night descended into congas and knee-creaking limbos. There were even reports about a well stocked, high altitude après party...

Heading home with bags full of freebies and sore heads all-round, there was no doubt that a lot had been gained from attending the conference. Its good to feel part of a community with common goals. Taking part instils a sense of optimism, enthusiasm and that tiny bit of healthy competitiveness. I'm now thoroughly looking forward to my next conference where, fingers crossed, I'll be presenting my data on the beach!

BSCB / BSDB Joint Spring Meeting

University of Kent, 27–30 April 2011.

The Joint Spring Meeting of the BSCB and BSDB is to take place in Canterbury between the 27th and 30th April 2011. The meeting promises to be an exciting blend of cell and developmental biology with a bit of something to tempt everyone.

The main theme running through the meeting is **Understanding Cell Biology and Behaviour at the Cellular and Organismal Level**.

The scientific organisers for the BSCB are Richard Grose (QMUL) and Martin Lowe (Manchester), and the organisers for the BSDB are Christopher Thompson (Manchester) and Juan Couso (Sussex).

The opening plenary lecture will be given by Professor Graham Warren (Vienna). As always, at this flagship meeting, the speaker line up is excellent and the sessions include: Forms and functions of cilia and flagella; Pathogens and membrane traffic; Cell signalling; Cell adhesion and migration; Inflammatory cell biology; Mechanisms of Gene Regulation; The Genome and Disease; Interactions of Signalling Pathways and Macromolecular Complexes, Organelles and Trafficking.

There will be a call for abstracts to present short talks that will be interspersed between invited speakers and, of course, plenty of poster slots to fill. Following the success of the lunchtime workshops in previous years, these will be repeated - expect updates on the content of these closer to the time. Our Postgrad and Postdoc reps will undoubtedly be organising some social activities.

It promises to be a fantastic meeting, less than an hour from London St Pancras on the High Speed 1 rail link and on the newly renovated UKC campus overlooking the historic city of Canterbury. We look forward to welcoming all of you there in April.

Details on speakers, venue, bookings and so on can be found by visiting the website (www.bscb.org).

Richard Grose, Scientific Co-organiser

2011 BSCB Programme Outline

27th Wednesday

Evening
Plenary Lecture: Graham Warren (Vienna)

28th Thursday

AM: Cell adhesion & migration
Martin Humphries (Manchester)
Frank Gertler (Boston)
Johanna Ivaska (Turku)
Gareth Jones (London)
Plus 2-3 short talks selected from abstracts

PM: Form and functions of cilia and flagella:
Philippe Bastin (Paris)
Joseph Gleeson (San Diego)
Lotte B Pedersen (Copenhagen)
Gregory Pazour (Worcester, MA)
Plus 2-3 short talks selected from abstracts

29th Friday

AM: Inflammatory cell biology
Wendy Havran (San Diego)
Paul Martin (Bristol)
Karin de Visser (Amsterdam)
Fran Balkwill (London)
Plus 2-3 short talks selected from abstracts

PM: Pathogens and membrane traffic
Mark Marsh (London)
Tom Wileman (Norwich)
Gisou van der Goot (Lausanne)
Craig Roy (New Haven)
Plus 2-3 short talks selected from abstracts

30th Saturday

AM: Cell signalling
Sabine Werner (Zurich)
Owen Sansom (Manchester)
Bart van Haesebroeck (London)
Gian-Paulo Dotto (Lausanne)
Plus 2-3 short talks selected from abstracts

BSCB Calendar of Meetings

BSCB Meetings 2011

Joint BSCB / BSDB Spring Meeting

27-30 April 2011
University of Kent, Canterbury
Organizing committee for BSCB: Martin Lowe, Richard Grose, Juan Pablo Couso, Chris Thompson

Current planned sessions:

BSCB: Cilia and flagella, Pathogens and traffic, Inflammation, Cell adhesion & migration, Cell signalling

BSDB: Robustness in signalling and development, Developmental plasticity and evolution, Integrative approaches to development, Cell dynamics and morphogenesis, Understanding human development and disease

BSCB Autumn meeting 2011

Cell Biology of Protein Degradation Pathways'
11-13 September 2011
Greenbank Conference Park, Liverpool
Organising committee: Michael Clague, Sharon Tooze, Sylvie Urbé

Check www.bscb.org for full details

Related Meetings

2010

11-12 November
mTOR signalling in health and disease
London, UK
www.biochemistry.org

15-18 November
EMBO Workshop: RNA control of Cell Dynamics
Kibbutz Ein Gedi, Israel
www.embo.org

21-26 November
ESF-EMBO Symposium: Molecular perspectives on protein-protein interactions
Sant Feliu de Guixols, Spain
www.embo.org

3 December
Actin 2010
Bristol, UK
www.bristol.ac.uk/biochemistry/actin2010/

11-15 December
ASCB 50th Annual Meeting
Philadelphia, USA
www.ascb.org/

2011

5-7 January
Biochemical Society Annual Symposium: Recent advances in membrane biochemistry
Cambridge, UK
www.biochemistry.org

14-17 February
Therapeutic Approaches to Neurodegeneration - Age Modifiers, Proteostasis, and Stem Cells
Bahamas
www.abcam.com

17-20 March
EMBO/EMBL Symposia: Seeing is Believing – Imaging the Processes of Life
Heidelberg, Germany
www.embo.org

30 March-1 April
Cellular Cytoskeletal Motor Proteins
Hinxton, Cambridge, UK
www.biochemistry.org/conferences

14 April 2011
Non-coding RNA, Epigenetic Memory, and the Environment
London, UK
www.abcam.com

7-11 May
EMBO Workshop: Cell biology of the neuron
Heraklion, Greece
www.embo.org

31 May-1 June
New Frontiers in Persistent Pain
Paris, France
www.abcam.com

13-15 October
EMBO/EMBL Symposia: Structure and Dynamics of Protein Networks
Heidelberg, Germany
www.embo.org

Honor Fell/Company of Biologists Travel Awards

Honor FellTravel Awards are sponsored by the Company of Biologists (the publishers of ***The Journal of Cell Science*** and ***Development)*** and they provide financial support for 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 **£300** for UK meetings (except for BSCB Spring Meeting for which the full registration and accommodation costs will be made), up to **£400** for European meetings and up to **£500** for meetings in the rest of the world.

The following rules apply:

- Awards are normally made to those in the early stages of their careers (students and postdocs)
- Applicants must have been a member for at least a year (or be a PhD student in their first year of study).
- No applicant will receive more than one award per calendar year and three *in toto*
- The applicant must be contributing a poster or a talk.

No lab may receive more than £1000 per calendar year.
Awards are discretionary and subject to available funds

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
- **proof of registration, travel and any other costs claimed**

Applications should be sent to:

Ewald Hettema
Dept. of Molecular Biology and Biotehnology
University of Sheffield
Firth Court, Western Bank, Sheffield S10 2TN

Application for Honor Fell/Company of Biologists Travel Award

Please complete, print out and send to Jordan Raff at the address above together with supporting information

Full name and work/lab address:
.

Email:

Age: BSCB Memb. No:

I have been a member for years

Years of previous Honor Fell /COBTravel Awards:

Degree(s) (dates):

Present Position:

Meeting for which application is made:
title/place/date:

Expenses claimed:

Travel:

Accommodation:

Registration:

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

Supporting statement by Lab Head:
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.

My lab has not received more than £1000 in Honor Fell/ COB Travel Awards during this calendar year

Signature:

Name:

Applicant's Signature:

Name:

Have you included all the necessary information/documentation in support of your application?

Committee Members 2010

President
Professor Clare Isacke
Breakthrough Breast Cancer Research Centre
Institute of Cancer Research
237 Fulham Road
London SW3 6JB
Tel: +44 (0) 20 7153 5510
Fax: +44 (0) 20 7153 5340
Email: clare.isacke@icr.ac.uk

Secretary
Professor Elizabeth Smythe
Department of Biomedical Sciences,
University of Sheffield,
Western Bank,
Sheffield S10 2TN
Tel: 0114 2224635
Email: e.smythe@sheffield.ac.uk

Treasurer
Professor Adrian Harwood
Cardiff School of Biosciences
Biomedical Building
Museum Avenue
Cardiff CF10 3US
Tel: +44 (0)29 879358
Fax: +44 (0)29 20 8
Email: HarwoodAJ@cf.ac.uk

Meetings Secretary
Dr Andrew McAinsh
Centre for Mechanochemical Cell Biology
Warwick Medical School
The University of Warwick
Coventry, CV4 7AL
Tel: +44(0) 2476 151167
Email:
andrew@mechanochemistry.org

Membership Secretary
Professor Dan Cutler
MRC Laboratory for Molecular Cell Biology
University College London
Gower Street
London
WC1E 6BT
Tel: 020 7679 7806
Email: d.cutler@ucl.ac.uk

Newsletter editor
Dr Kate Nobes
School of Biochemistry,
Medical Sciences Building,
University Walk,
Bristol BS8 1TD
Tel: 0117 331 2229
Email:
Catherine.nobes@bristol.ac.uk
(to whom material should be sent – see guidelines for contributors)

Website Coordinator
Dr. Paul. D. Andrews
Stem Cell Technologies Programme
Drug Discovery Unit
Division of Biological Chemistry and Drug Discovery
James Black Centre
College of Life Sciences
University of Dundee
Dundee DD1 5EH
Tel: +44 (0)1382 386 453
Email:
paul@lifesci.dundee.ac.uk

Sponsorship secretary
Dr Richard Grose
Centre for Tumour Biology
Institute of Cancer and the CR-UK Clinical Centre
Barts and The London School of Medicine and Dentistry
Ground Floor, John Vane Science Centre
Charterhouse Square
London EC1M 6BQ
Tel +44 (0)207 014 0415
Email: r.p.grose@qmul.ac.uk

Honor Fell/COB Travel Award Secretary
Dr Ewald Hettema
Dept of Molecular Biology and Biotechnology
University of Sheffield
Sheffield
Tel: +44 (0)114 222 273
Email:
e.hettema@sheffield.ac.uk

Committee members

Dr Buzz Baum
MRC Laboratory of Molecular Cell Biology
University College London
Tel: +44 (0)20 7679 3040
Email: b.baum@ucl.ac.uk

Professor Iain Hagan
Department of Biochemistry and Applied Molecular Biology
University of Manchester, and
Cell Division Group
Paterson Institute for Cancer Research
Christie Hospital
Wilmslow Road
Withington
Manchester, M20 4BX
Email: ihagan@picr.man.ac.uk

Professor Patrick Hussey
School of Biological and Biomedical Sciences
Durham University
Email: p.j.hussey@durham.ac.uk

Dr Sean Munro
MRC Laboratory of Molecular Biology
Hills Road
Cambridge CB2 2QH
Telephone: (01223) 402236
E-mail: sean@mrc-lmb.cam.ac.uk

Dr Sylvie Urbé,
Department of Physiology,
University of Liverpool,
Liverpool
Tel: 0151 794 5432
Email: urbe@liv.ac.uk

Dr Grant Wheeler
School of Biological Sciences
The University of East Anglia
Norwich
NR4 7TJ
Email: grant.wheeler@uea.ac.uk

Non-elected (co-opted) members

PhD student rep
Jay Stone
UCL Institute of Ophthalmology
11-43 Bath Street
London
Email: j.stone@ucl.ac.uk

Postdoc rep
Vacant position

BSCB assistant
Margaret Clements
BSCB Assistant
The Company of Biologists Ltd.
140 Cowley Road
Cambridge CB4 0DL
Email bscb@biologists.com

Schools Liaison Officer
David Archer
43 Lindsay Gardens,
St.Andrews,
Fife,
KY16 8XD
Email: d.archer@talktalk.net

The British Society for Cell Biology

Statement of Financial Activities for the year to 31 December 2008

	2008			2007
	Unrestricted	Restricted	Total	Total
	£	£	£	£
Incoming Resources				
Incoming resources from generating funds:				
Voluntary income	30,000	27,500	57,500	50,000
Incoming resources from charitable activities:				
Meetings	48,023	–	48,023	9,235
Subscriptions	20,084	–	20,084	28,679
Investment income:				
Bank interest	6,547	–	6,547	10,765
Other incoming resources	2,461	–	2,461	900
Total incoming resources	107,115	27,500	134,615	99,579
Resources Expended				
Charitable Activities:				
Grants payable:				
Honor Fell travel awards	5,907	27,869	33,776	27,899
Studentship	11,590	–	11,590	–
Costs of meetings	66,556	–	66,556	21,079
Newsletter costs	5,450	–	5,450	5,794
Website expenses	2,180	–	2,180	5,943
Governance costs	57,462	–	7,462	4,950
Bad Debt	900	–	900	–
Total resources expended	100,045	27,869	127,914	65,665
Net movement in funds for the year	7,070	(369)	6,701	33,914
Reconciliation of funds				
Funds brought forward at 1 January	218,026	369	218,395	184,481
Funds carried forward at 31 December	225,096	–	225,096	218,395

BSCB Ambassadors 2010

The BSCB Ambassadors are the people to ask about sponsoring you for membership.

Anyone who wishes to volunteer to become a BSCB ambassador at any Institutes not represented in the list below please contact the BSCB.

City/ Institute	Ambassador	Contact
Aberdeen	Anne Donaldson	a.d.donaldson@abdn.ac.uk
Aston University	Eustace Johnson	w.e.johnson@aston.ac.uk
Bath	Paul Whitley	bssprw@bath.ac.uk
Belfast	James Murray	j.t.murray@qub.ac.uk
Birmingham	John Heath, Feydor Berditchevski	J.K.HEATH@bham.ac.uk, f.berditchevski@bham.ac.uk
Bradford	Jason Gill	j.gill1@Bradford.ac.uk
Brighton	John Armstrong	j.armstrong@sussex.ac.uk
Bristol	Harry Mellor	H.Mellor@bristol.ac.uk
Brunel	Joanna Bridger	Joanna.Bridger@brunel.ac.uk
Cambridge	Jon Pines, Scottie Robinson	jp103@cam.ac.uk, msr12@mole.bio.cam.ac.uk
	Simon Cook, Gillian Griffiths	simon.cook@bbsrc.ac.uk, gg305@cam.ac.uk
Canterbury	Martin Carden, Dan Mulvihill	m.j.carden@ukc.ac.uk, d.p.mulvihill@kent.ac.uk
Cardiff	Morris Hallet, Adrian Harwood	hallettmb@cf.ac.uk, HarwoodAJ@cf.ac.uk
Clare Hall	Simon Boulton	simon.boulton@cancer.org.uk
Dundee	Angus Lamond, Inke Nathke	a.i.lamond@dundee.ac.uk, i.s.nathke@dundee.ac.uk
Durham	Roy Quinlan	r.a.quinlan@durham.ac.uk
Edinburgh	Bill Earnshaw, Ian Chambers	Bill.Earnshaw@ed.ac.uk, ichambers@ed.ac.uk
	Margarete Heck, Wendy Bickmore	margarete.heck@ed.ac.uk, W.Bickmore@hgu.mrc.ac.uk
Glasgow	Nia Bryant, Karen Vousden	n.bryant@bio.gla.ac.uk, k.vousden@beatson.gla.ac.uk
Hull	Klaus Ersfeld	k.ersfeld@hull.ac.uk
ICR	Clare Isacke	clare.isacke@icr.ac.uk
Imperial	Vania Braga, Mandy Fisher	v.braga@ic.ac.uk, amanda.fisher@csc.mrc.ac.uk
Kings/Guys	Simon Hughes	s.hughes@kcl.ac.uk
Leeds	Michelle Peckham	m.peckham@leeds.ac.uk
Leicester	Andrew Fry	amf5@leicester.ac.uk
LIF	Giampietro Schiavo	giampietro.schiavo@cancer.org.uk
Liverpool	Daimark Bennett, Sylvie Urbe	daimark.bennett@liv.ac.uk, urbe@liv.ac.uk
Ludwig	Anne Ridley	anne.ridley@kcl.ac.uk
Manchester	Charles Streuli, Iain Hagan	charles.streuli@man.ac.uk, IHagan@PICR.man.ac.uk
	Viki Allan	Viki.Allan@manchester.ac.uk
Marie Curie	Andrew McAinsh	A.McAinsh@mcri.ac.uk
Newcastle	Michael Whittaker	michael.whitaker@newcastle.ac.uk
NIMR	Peter Rosenthal, Jean-Paul Vincent	prosent@nimr.mrc.ac.uk, jp.vincent@nimr.mrc.ac.uk
Norwich	Grant Wheeler, Tom Wileman	grant.wheeler@uea.ac.uk, T.Wileman@uea.ac.uk
Nottingham	John Mayer	John.Mayer@nottingham.ac.uk
Oxford	Chris Hawes, James Wakefield	chawes@brookes.ac.uk, james.wakefield@zoo.ox.ac.uk
	Jordan Raff	jordan.raff@path.ox.ac.uk
Queen Mary	Mark Turner	m.d.turner@qmul.ac.uk
Reading	Jonathan Gibbins	j.m.gibbins@reading.ac.uk
Sheffield	Liz Smythe, Andy Grierson	e.smythe@sheffield.ac.uk, a.j.grierson@sheffield.ac.uk
Southampton	Malcolm East, Paul Townsend	j.m.east@soton.ac.uk, P.A.Townsend@soton.ac.uk
	Jane Collins	jec3@soton.ac.uk
St Andrews	Frank Gunn-Moore	fjg1@st-andrews.ac.uk
St Georges	David Winterbourne	sghk100@sghms.ac.uk
UCL	John Carroll, Patricia Salinas	j.carroll@ucl.ac.uk, p.salinas@ucl.ac.uk
Vet College	Nigel Goode	ngoode@rvc.ac.uk
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York	Dawn Coverly	dc17@york.ac.uk

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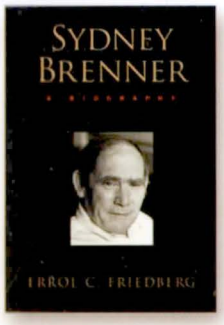

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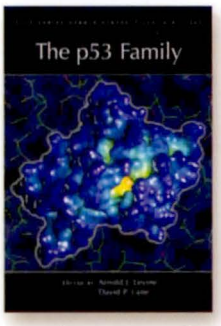

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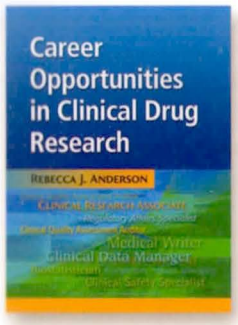

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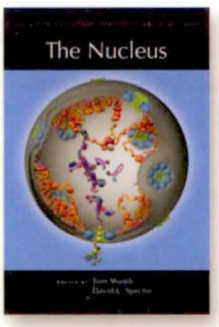

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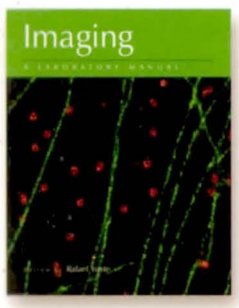

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