BSDB Newsletter

Summer 2005
Vol. 26, No. 1

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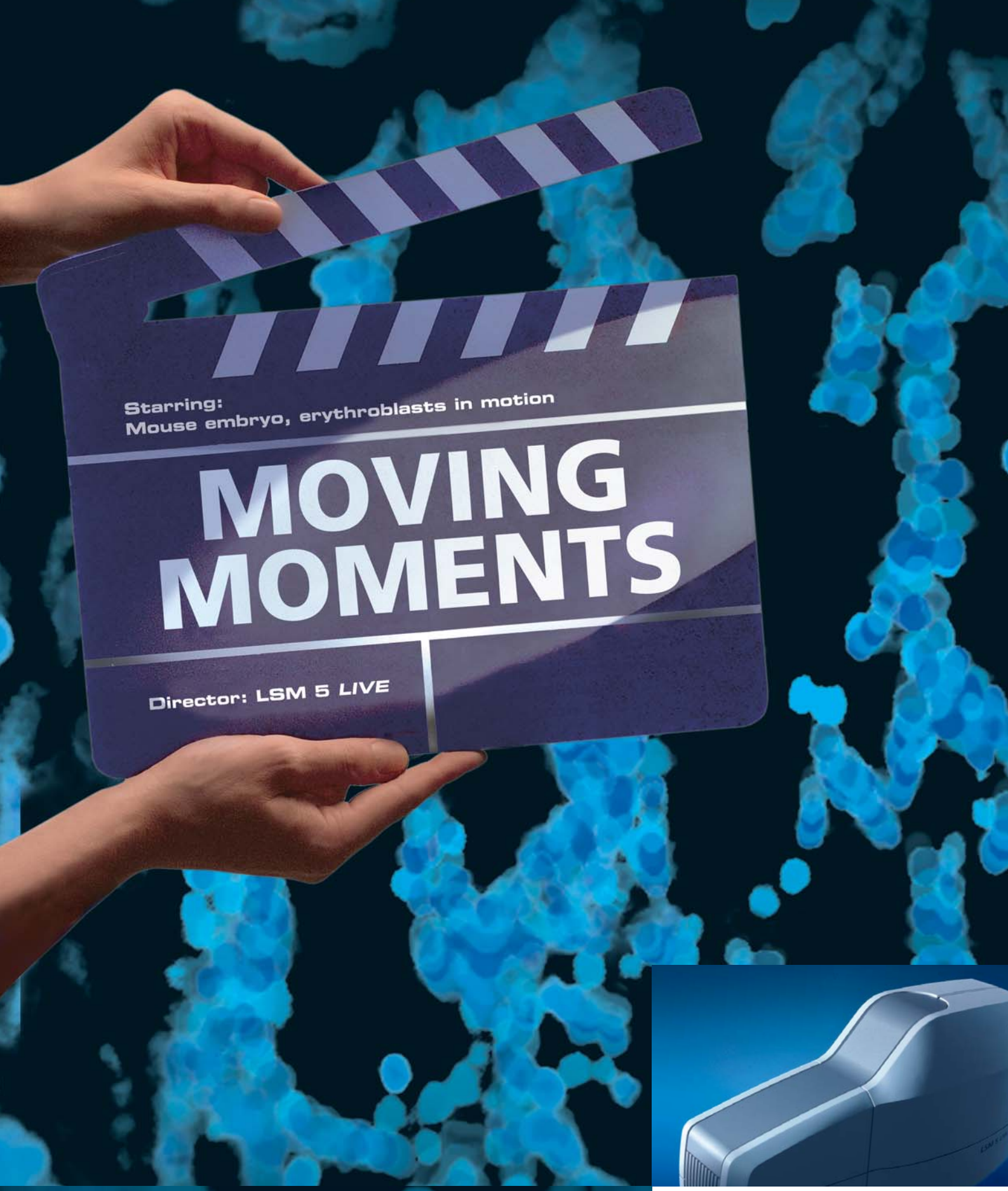
Autumn Meeting 2005
Wnt signalling in Development, Disease and Cell Biology



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BSDB Newsletter

Summer 2005 Volume 26, Number 1

Editorial

Well, this is it, my last effort. It seems we have come full circle and now I can begin to appreciate how **Vernon French** felt by the time he got to the stage I am now. You start with the wind behind you, fresh ideas, new computer, the world's yours for the taking. Now the voyage is nearly over, I can see the sails are in bad need of repair, indeed the patched holes in the hull make one think it may be time to get a complete new boat. But help is at hand. The next issue – whatever form it takes – will have a new hand at the helm of, perhaps, a brand new vessel. A warm welcome aboard to **Andrew Jarman** who takes over in the Autumn.

Still, there are a few bright points in the old ship yet. Somehow this issue has - not for the first time - taken on a theme of its own, that of the place of scientists in society; how society perceives us, and how we present ourselves to society. From **Mendel's Garden** (p8) to **Ann Lackie's** call to arms to get scientists better presented on our screens (p6). You can join the charge and nominate your favourite 'communicator' to the BSF/Pfizer **'Science Communication Award'** (p7). Or perhaps make moves to become a communicator yourself, in which case you may find **Ann Lackie** and **Peter Normington's** new experiment, SciTalk (p7), a provocative challenge.

Or may be you feel that getting the message across starts in schools? If you have ideas about presenting science to school children, or if you already do this, **David Wilkinson** and **Corinne Houart** would be particularly interested to hear from you. You may also be interested in the Biochemistry Society's new **biochem4schools** website (p4), or indeed in the **Science Learning Centres** project jointly sponsored by the DfES and the Wellcome Trust to help teachers teach and stay abreast of science and technology (http://www.sciencelearningcentres.org.uk/).

Staying with the theme of communicating science, have you got a great idea for a **Waddington Medal** or **Beddington Medal** recipient? The committee is now accepting nominations for both of these prestigious awards. See the website (http://www.bsdb.org) for details.

We are also looking for a theme for the Autumn 2007 BSDB Meeting. If you're hankering for an opportunity to tell the world just how important glycosyltransferases are (sorry Jamie), perhaps this is your chance?

So that's it, I'm off. Good luck Andrew….

The Editor
(mailto:a.j.furley@sheffield.ac.uk)

Contents

ISDB Sydney 2005
ABSTRACT DEADLINE
25th May 2005
See http://www.isdb2005.com

Autumn Meeting 2005

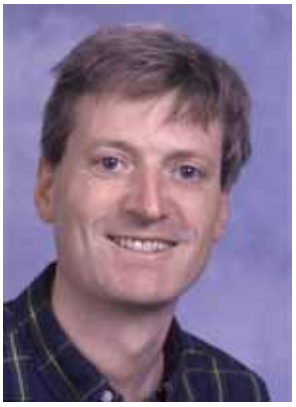
Wnt signalling in Development, Disease and Cell Biology

Aberdeen, 14th – 16th September

For further details see **page 11** and
http://www.bsdb.org

Early registration and abstract submission deadline 1 July 2005
(Travel Grant Deadline 17th June 2005)

Chairman's Letter



Another spring, another BSDB Spring Meeting. On a personal note, this was the first at which I was BSDB Chairman, and it had a rather different flavour to previous ones. I realised for the first time what a production is involved behind the scenes, and how much hard work is involved. All who attended and enjoyed the meeting owe a real debt of thanks to its organisers, **Phil Ingham** and **Alfonso Martinez-Arias** for BSDB and **Jordan Raff** for BSCB; also to **Nancy Papalopulu** and **Kairbaan Hodivala-Dilke** the BSDB and BSCB meetings' organisers, respectively.

I also want to thank the companies that sponsor the meeting in various ways. If you are one of those who think the trade exhibitors are a bit of a nuisance and get in the way of the posters, think again. Their contributions are vital. We strive to keep the registration fees as low as possible and to cover the costs of as many students as possible – we see this as an essential part of the BSDB mission. The budgets of the meetings are therefore very tight and without commercial sponsorship the sums just don't add up.

So next time you are at a BSDB meeting, remember this and why not spend five minutes at each coffee break taking a look at the stands? You won't just be helping the organisers convince the exhibitors that the meeting is worth supporting (really essential – your interaction really makes a difference), you may also gain an edge in your own research. A new microscope being exhibited, the editor of the journal in which you hope to publish, or a source of a new antibody that could lead to a breakthrough – they are all at your service; take advantage of the opportunity. In a more obviously popular form of sponsorship, the journal **Science** this year sponsored the drinks at the opening poster session. This was a big success and you can rest assured that as well as conveying your thanks to Science, we will be encouraging them to do the same next year.

The Spring meeting is also where the two annual BSDB medals are awarded. The Waddington Medal is awarded primarily for outstanding achievement in UK developmental biology and this year's very worthy recipient was **Mike Akam**. You can read more about this elsewhere in this newsletter. The Beddington Medal, in memory of **Rosa Beddington**, is awarded to the person submitting the best UK PhD thesis in any aspect of developmental biology in the preceding calendar year. This year we had many entries and the standard was very high. In the end, the winner of the **2005 Beddington Medal** was **Huw Williams** from Cambridge, for his work on the movement through tissue of TGFß ligands in Xenopus embryos. The committee felt that his work deserved the medal not only because of its technical excellence but also because it addressed a fundamentally important and timely issue.

Importantly, **both the Waddington and the Beddington Medals can be nominated by BSDB members**. The instructions and deadlines are on the website, so get thinking: do you have a student whose thesis deserves national recognition (or are you such a student, who could tactfully leave the instructions on your supervisor's desk)? Is there someone who you think would be an excellent recipient of the Waddington Medal? As with everything else about the BSDB, the committee hugely welcomes your input, so help us to maintain the quality of these prizes.

In closing, I want to emphasise how strong a successful the link with the BSCB is and how the brand recognition of our joint spring meetings has led to their increasing strength, both in terms of filling the venues (we sell out) and in terms of the quality of speakers we can attract. We have an agreed to maintain this winning formula for at least the next few years (plus a bonus of a three way joint meeting with the Genetics Society in 2007), so mark your diaries and apply in good time to ensure your place.

Matthew Freeman, Cambridge

Waddington Medal 2005

This year is the centenary of **Conrad Waddington's** birth, giving the Waddington Medal a special resonance. Waddington (1905-1975) was one of the most original and influential developmental biologists of the 20th Century. He started out as a geologist but became an embryologist, establishing the first evidence for organisers in higher vertebrates while working at the Strangeways Laboratory in the early 1930s. He later developed a strong interest in the genetics and, among many other ideas, developed the concept of an epigenetic landscape to depict the choices faced by cells in developing embryos.

The BSDB awards the Waddington Medal primarily for outstanding research achievement by a UK based developmental biologist; however, it also recognises contribution to developmental biology more broadly, for example through teaching, mentoring or intellectual leadership. Despite these demanding criteria, the choice is not easy: this year, the BSDB committee awarded the Waddington Medal to **Michael Akam**, Director of the Zoology Museum and Professor of Zoology at Cambridge.

Mike studied zoology at Cambridge where he was lectured in developmental biology by **Peter Lawrence** and **Sydney Brenner**. He then went to Oxford to do a PhD with **David Roberts**. After a brief encounter with nematodes at the LMB in Cambridge, he joined **Dave Hogness's** lab at Stanford in 1979. This was the principal place where molecular cloning techniques and Drosophila genetics were first brought together, and many of the most influential Drosophila molecular geneticists of the last 20 or 30 years went through the Hogness lab. Mike participated in the cloning of the Ubx cluster of genes – the first HOX cluster. He also developed techniques for in

Waddington Medal 2005

situ hybridisation to RNA in Drosophila tissue sections – a technique that revolutionised developmental biology.

On his return to Cambridge in 1982, where he has been in various departments ever since, he used single stranded probes to show for the first time in Drosophila (or indeed any other organism) that the Hox genes were spatially regulated along the antero-posterior axis. This dramatically confirmed models based on the genetic studies of **Ed Lewis** – someone that Mike acknowledged as a particular influence in his Waddington Lecture – and gave Mike one of those rare eureka moments when he developed the in situ slides.

Since then he has exploited our growing knowledge of Drosophila development to study the genetic basis for animal diversity. His particular interests are the diversity of patterning mechanisms during insect embryogenesis, and the control of Arthropod body plans by Hox genes. Mike is now one of the leading lights of the evo-devo field as well as being one of its founders.

Mike clearly fulfils all criteria for the award of the Waddington Medal. He is an outstanding developmental biologist who has been enormously influential in the birth and development of a whole new discipline. He was also one of the founder members of the Wellcome/CRC Institute, now the Gurdon Institute, an establishment that has had a major impact on British developmental biology. A brilliant teacher and mentor, the following quote typifies the loyalty and warmth felt by those who have worked with him: "His clarity of thought, focus and dedication, enthusiasm, critical thinking, honesty and support are all aspects that I have valued tremendously".

When awarding the Waddington Medal, one hopes that not only is the winner an outstanding developmental biologist but also that they are an entertaining speaker. The winners are asked to give their talk an autobiographical flavour, and Mike's Waddington Lecture at the BSDB/BSCB joint Spring Meeting was outstanding, balancing interesting science, big themes, personal reminiscence and the obligatory old photos. Tellingly, he kept the cell biology half of the audience as gripped as the developmental biologists, and his story impressively illustrated why he is such a worthy winner of the 2005 Waddington Medal.

News (& Views)

Who's Out and Who's In: Changes to the BSDB Committee

Well, me, I'm going, and so is **Alfonso Martinez-Arias**, and I think we did brilliant jobs! Alfonso has to be thanked particularly for inspiring (together with **Phil Ingham**) Biology at the Beach, the Nice meeting in the sun in September 2003. Coming in to take our places, **Kate Lewis (Anatomy, Cambridge)** and **Stefan Hoppler (Medical Sciences, Aberdeen).** Most importantly, for me at any rate, **Andrew Jarman** is also my white knight striding purposefully in to take over as Publications Secretary. Finally, **Raphaela Kitson-Pantano,** also from the Jarman lab in Edinburgh (bit of a coup methinks) is taking over from **Caroline Parkin** as Graduate Representative.

There's no place to hide....

While the numbers of you updating your standing orders to reflect the new subscription rates is increasing, it remains the case that **two thirds of the membership are still paying at the old rate**. Not only might you feel a little guilt with regard to fellow members (and all those who failed to get a Travel Grant last year), but, as of **1st August 2005**, **members not paying** the correct subscription **will be unable to receive travel awards** or countersign applications for membership For details of how to update your subs see page 8

Development Subscription Rates

For current discounted journal subscription rates, please see the website (http://www.bsdb.org)

BSDB Summer Students - Update

Funds permitting, the BSDB will consider applications for stipends to support undergraduate students doing laboratory work over the summer vacation (2006). Further details from **Guy Tear.**

PayPal payments for Meetings

Those members, particularly those overseas, frustrated by the hassles associated with paying for meetings etc. by UK bank cheque, may be pleased to hear that the BSDB has now decided to accept payment via the internet money transfer system PayPal (backed by eBay). For more details, contact **Guy Tear**.

Beddington Medal 2005

As noted above, the Beddington Medal this year was one by **Huw Williams** in **Jim Smith's** lab for his work on the movement of TGFß family members through tissues. For those of you who missed Huw's talk at the Spring Meeting, see Williams et al. (2004). Curr Biol 14: 1916-23.

Spring Meeting Poster Prizes

The prizes awarded for posters at this year's meeting went to:

1st Prize

Katja Dahlgaard (Daniel St. Johnston's lab).

Title: Analysis of components involved in actin's regulation of microtubule reorganisation during Drosophila oogenesis

Authors: K Dahlgaard & D StJohnston

Katja wins a trip to the US Society for Developmental Biology Annual Meeting

Equal runners-up

Emma Kenyon (Derek Stemple's lab)

Title:Eyes wide shut: investigations into Rab3c.

Authors: EJ Kenyon, MD Clark & DL Stemple

Emma wins a subscription to Nature Reviews.

Steve Harvey (Malcolm Logan's lab)

Title: Sal4, the gene mutated in Okihiro syndrome, plays a role in maintaining limb outgrowth.

Authors: SA Harvey, J Del Buono & M Logan

Steve wins a subscription to Current Biology

Science Learning Centres

As a £51 million joint initiative by the **Department for Education and Skills** and the **Wellcome Trust,** the national network of Science Learning Centres has been created with ambitious goals in mind; not least to help British teachers, technicians and classroom assistants to lead the world in science education by 2015.

News (& Views)

The network, which will be made up of nine regional Centres and a National Centre, has been created to bring about innovation and inspiration in the science curriculum.

Teachers and technicians will use the Science Learning Centres to gain support and expertise in delivering science education that gives students the knowledge and understanding they need - both as scientists and citizens of the future.

The national network of Science Learning Centres will offer professional development across all spheres of science education, from primary to post-16, offering teachers and technicians across the country access to resources and support, bringing together research, industry and educational expertise thus acting as a catalyst for creating intellectually stimulating and relevant science education.

The aim of all Science Learning Centres is to reconnect teachers with the frontiers of their subject and the latest techniques for teaching it. Teachers will also have the opportunity to renew and extend their teaching skills by mixing with and learning from colleagues who face similar challenges to their own, and will have access to the UK's leading experts in science educational research.

At the Science Learning Centres contemporary science courses will boost teachers' knowledge of groundbreaking science and technology and their related societal and ethical issues. By working in partnership with industry leaders, research scientists and scientific organisations, the Science Learning Centres will offer practical scientific knowledge and experience. This will be matched with educational expertise ensuring that teachers and technicians can gain professional development that is creative, intellectually stimulating and relevant both in terms of contemporary science and the classroom environment. Many courses reach beyond science exploring citizenship and the impact science has on society.

The courses offered at the regional Centres will include at least one day's training at the Centre, together with ongoing support through classroom exercises and online materials. The National Science Learning Centre, based at the University of York, will offer residential courses for teachers, providing access to the facilities for teachers from across England, Scotland, Wales and Northern Ireland.

The National Science Learning Centre will open in Autumn 2005, a year after the regional Centres, in a newly-built £11 million venue whose ground breaking design and fittings will demonstrate the principles of sustainability, and will themselves be used in the teaching of science.

As they are opening, each Centre is working closely with teachers and organisations within their region to ensure that the courses being created and delivered meet the needs and aspirations of the science education community. The initial courses offered will be closely evaluated to ensure that they meet the high goals set and deliver the support intended. Fees are charged for the courses, but every Centre has the ability to offer discount incentives to ensure that teachers and technicians from every school are able to explore the courses on offer.

For details of where the Science Learning Centres are and what courses are available visit www.sciencelearningcentres.org.uk

biochem4schools - a new ONLINE RESOURCE for teachers and students

Launched at the ASE (Association for Science Education) Annual Meeting, being held from 6-8 January 2005 in Leeds.

Developed by the Biochemical Society, this new, free to use and user-friendly 'portal' biochem4schools is for use by teachers and students at all levels who are searching for biochemistry resources. Providing a gateway to over 300 web-based resources it covers 16 wide-ranging topic areas.

Each resource site on biochem4schools also has icon labels to explain suitability for different age groups and curriculum links. Additionally descriptions of and comments on the content and extensive cross-referencing help you to find what you are looking for. Users will be able to review all resources, so you will be able to see the top sites to visit in each topic.

Log on as soon as you can and discover just how useful this resource can be. Let us know what's missing too - we're keen to hear your views.

Don't waste valuable time trawling the web, try biochem4schools for yourself!

http://www.biochem4schools.org

If you have news, letters or comments you would like aired to the developmental biology community, please write to the Editor, Andrew Jarman andrew.jarman@ed.ac.uk

Please note, the opinions and views expressed in this column are those of the signatories. Inclusion here is not intended to indicate endorsement by the BSDB.

Graduate Student Section

The Graduate Student section needs reinvigorating..... A job for our New Graduate Representative Raphaela Kitson-Pantano.

Welcome Raphie!
More next time, we hope.....

Taking The Anoraks Out Of Fiction

Ann Lackie

Why is it that 'scientists' still have such a bad media image? Science coverage is increasing year by year; indeed we are almost overwhelmed by articles in magazines and newspapers, programmes on radio and multi-channel television, and — perhaps more important because of its disproportionate effect on public perception — science in drama on screen and stage, science in art, science in novels. Science is the new rock-and-roll.

Yet still we see television adverts in which the only time a geeky, unattractive microbiologist (white, male, spectacled) speaks during a dinner party is when he tells the girl next to him about her gut bacteria! We can be certain that he'll wear an anorak and hang around on railway platforms in his spare time.

Not only is this generic image inaccurate, it is condescending to the viewers ('scientist' doesn't always equal 'social misfit') and, unfortunately, it strengthens a perception that may be gained very early in life.

A couple of years ago I sampled a range of children's story-books to see how scientists were treated. It was a delight to come across Margaret Springer's Tatty Kumpf and Philip Pullman's Dr Mary Malone, both authors having created intelligent and thoughtful females in the rôle; but in the main, the other scientists conformed to the stereotypes — the mad, bad old men or the wild-haired meddlers. I had a discussion with a group of 9-11-year-olds, and read out a sentence: '*Professor Smith rushed into the lab to speak to Dr Jones, who was staring at a rack of tubes*'. When I asked the children how they imagined Professor Smith, their hands shot up. 'His hair's all a mess,' 'He's wearing hole-y clothes' and (my favourite) 'He hasn't a clue!' So I showed them a slide of a well-dressed woman in her 30s (Professor 'Smith') and of an attractive Chinese postdoctoral assistant, also female, who was examining a rack of plastic vials containing cells in culture; and we talked about who scientists are and what they do. At the start of the talk, only about 5% of the children had wanted to become a scientist; at the end, more than two-thirds. I have to hope that the aspiration will remain with them despite the worst attempts of fiction-writers and 'the media'.

Targets are very fashionable these days: let us, as bioscientists, set ourselves a target of getting scientists, and especially bioscientists, into fiction and drama.

There are two ways of doing this: by identifying what we have to offer — and by persuading writers that, although they might not have recognised it before, they *need* us to enrich their fiction, whether drama, poetry or prose.

Playwrights and novelists need 'characters'; these are created in the writer's mind, but nevertheless each character requires a biography or 'back-story', a *modus vivendi*, a place and style of work and of interactions with others. Bioscience provides models for every scenario, ranging as it does from computerised data-handling to lab work (alone, or in a team), to fieldwork (alone or in a co-operative unit); a nine-to-five job to almost continuous; crepuscular, nocturnal, diurnal; sessile or the life of a wandering collaborator and conference-goer.

The language and imagery of bioscience are diverse and beautiful: from the nano-level to the gigantic, the names, the jargon, the short-hand — if a writer becomes immersed in this, how much more powerful the work of fiction becomes. And then there are the social interactions: the hierarchies in academia and industry, the everyday lives, loves and hates; the rivalries and the collaborations that cross ethnic and geographic boundaries. There is so much *flexibility* for the creative writer to explore and use: a character for every occasion.

Perhaps what should be most intriguing for the dramatist or novelist is the exploration of the manner in which scientists engage with their science: the sheer drudgery, the intuitive leaps, the use of metaphor, and the testing of ideas and experimental methods — crowned, of course, by that rare, exhilarating moment when The Answer becomes clear! And to produce that Answer, thousands of human-hours have been put in, by technicians, PhD students, postdocs and group leaders, involving discussions, reports, meetings, grant applications, and the many layers of bureaucracy that culminate in the writing of a paper. This in turn leads on to the huge questions raised by the ethics and dilemmas of scientific discovery.

This is what we must explain. And also, that we have lives outside the labs and office: we change nappies; collect children from extracurricular activities; cook; dog-walk; worry about mortgages and blocked drains; go pubbing or clubbing or hill-walking, or fall asleep in front of the TV; have many loves, or none or one!

How do we make our voices heard? We make ourselves available through databases and organisations that encourage cross-cultural activities. The Calouste Gulbenkian Foundation and the Wellcome Trust help writers, artists and scientists to come together; SetNet's Science Ambassadors scheme and the UK Life Sciences Speakers database (www.biology4all.com) list scientists who will act as speakers.

But it is the personal, one-to-one conversation, rather than the 'talk' that is so important to the writer. Increasingly, writers (notoriously independent working units) are organising themselves into 'virtual groups' to disseminate information. Let's take the initiative and tell them that we are here — and show them that we are human, and interesting, and in every way useful to their fictions.

Dr Ann Lackie, parasitologist and zoologist, is also the novelist Ann Lingard (www.annlingard.com)

This is a slightly-altered version of an article that appeared in *The Biologist*, in June 2003; we are very grateful to *The Biologist* for permission to reproduce it here.

CALLING ALL SCIENTISTS!

SciTalk: connecting scientists and writers

SciTalk is a project to help fiction writers meet with scientists. Conceived by former zoologist and parasitologist Ann Lackie (also known as the novelist Ann Lingard; see www.annlingard.com) and developed by her in collaboration with physicist and information scientist Peter Normington, it is the practical outcome of an article that Ann wrote for *The Biologist*, '*Taking the anoraks out of fiction'*, exhorting scientists to take control of their own image in fiction

The principal aim of **SciTalk** is to make possible personal contact between scientists and writers – playwrights, poets and novelists - one-to-one and face-to-face. With encouragement and funding support from NESTA, a database and website are currently being set up to facilitate these contacts.

Full details of how writers and scientists will be able to use **SciTalk** will appear in a later Bulletin when the website goes live, but at this stage Ann and Peter need the help of some scientists – from any discipline – to provide some information and get the project under way. So, if you are a scientist who is intrigued by the idea of explaining what you do, how you do it, and what drives you, then **SciTalk** would like to hear from you.

If you would like to help **SciTalk** develop the registration and details listing, please contact Ann by email at the address below. You will receive instructions on how to fill in details about your work and research interests and, if you wish, you can also include images to illustrate what you do. And you will have plenty of opportunity to refine your details before the website goes live.

SciTalk is all about enthusiasm and communication – and the fun and challenge of explaining what you do. Writers and scientists can both suffer from stereotypical images. If **SciTalk** helps fiction-writers to enjoy using science and to include scientists as believable characters – and helps scientists learn how writers work and what they mean by 'research' - then the project will have achieved success.

www.scitalk.org.uk -- going live in June 2005

For further details meanwhile, contact ann@scitalk.org.uk

Biosciences Federation Science Communication Award for Active Researchers in Higher Education Institutions (Sponsored by Pfizer)

Objective:

To recognise Research Active Bioscientists in the Higher Education Sector who make an outstanding and consistent contribution to **communicating science to the public**

The Award:

First prize of £1000 and runner up prize of £250. Awarded annually at a Members meeting of the Biosciences Federation. The winner will be expected to make a short presentation illustrating his/her science communication activities following the receipt of the award

For further information visit the Bioscience Federation website:

www.bsf.ac.uk

GREGOR MENDEL'S LEGACY LIVES ON AT NEW MUSEUM OF GENETICS

The legacy of Gregor Mendel, the 19th Century friar who discovered the laws of heredity, has been secured by the formation of the Mendel Museum, Museum of Genetics, in the Abbey of St Thomas in Brno, where Mendel lived and worked.

Fund raising for the project began in May 2002, when the Abbey opened its doors to the public with an exhibition entitled, '**The Genius Of Genetics, A Celebration Of Gregor Mendel Through Science And Art**', curated by **Marina Wallace** and **Martin Kemp**. The exhibition has been seen by over 15,000 people in Brno and traveled to the Genoa Science Festival in October 2003. A second exhibition, '**Genes and Genius, the Inheritance of Gregor Mendel**', is planned for this September and both exhibitions will transfer to the Field Museum in Chicago in 2006, followed by an American tour.

This initiative laid a solid foundation to establish the **Mendel Museum, Museum of Genetics**, now a legal entity under Czech law. The Mendel Museum provides a permanent home in museum conditions for the archive of items and documents belonging to Gregor Mendel and the Abbey of St Thomas, most of which have never been on display before. The aim of the Museum is to establish a programme of genetic exhibitions that cover both the history of genetics and current research topics and to communicate these with imagination and insight to a wide general audience.

The restoration of Mendel's garden continues, as part of the Museum's work. A landscape design competition was held for students at the Mendel University of Agriculture and Forestry and the winner participated in the design process with the architect, **Eva Jiricna**, to complete the genetics demonstration garden and to redesign the Abbey garden along genetic themes. Mendel's bee house has been restored and working bees are now once more in the apiary.

The **Mendel Center**, which opened in the Abbey in May 2002 with the inaugural conference, '**EMBO Workshop, Genetics after the Genome**', aims to provide a centre for scientific discovery, communication and education alongside the Museum. The Mendel Center hosts conferences in the elegant Abbey rooms and runs a lecture series in association with the Czech Academy of Sciences. Speakers in the lecture series have included: **Walter Bodmer, François Gros, David Hopwood, Tim Hunt, Horace Freeland Judson, Anne McLaren, Robert Olby** and **Charles Weissmann**. This year's speakers are: **Barry Dickson, Ernst Hafen, Alec Jeffries, Marc-Andre Sirard, Jack Szostak** and **Edward Trifonov** and confirmed speakers for 2006 are **Adrian Bird, Susan Lindquist** and **Steve McKnight**. Bookings for conferences can be made through Anna Nasmyth (anna@imp.univie.ac.at).

Professor **Gustav Ammerer**, director of the Mendel Museum said, 'We have reached a milestone in our plans to preserve Gregor Mendel's scientific and intellectual legacy. Scientists and public alike will be able to learn not only about the remarkable origins of the science of heredity but also about the enormous impact it has had on society.'

CALL FOR ASSISTANCE

Please help us preserve Mendel's legacy by making it available to the public. Donations can be made to 'The Gregor Mendel Trust', c/o Simon Weil, Bircham Dyson Bell, 50 Broadway, London, SW1H OBL (HYPERLINK "mailto:simonweil@bdb-law.co.uk" simonweil@bdb-law.co.uk).

Sponsor Mendel's Garden

You can help restore Mendel's Garden as a genetics demonstration garden by sponsoring a square metre. We will send you a certificate and your name will be added to the list of sponsors on the web site. The garden is being restored under the supervision of **John S. Parker**, Director of the Cambridge University Botanic Garden, Prof **Ladislav Havel** of the Mendel University of Agriculture and Forestry in Brno and **Eva Jiricna**, a renowned Czech architect.

Sponsor Mendel's Garden: £100 per square metre.

Members of the Mendel Museum, Museum of Genetics

Abbey of St Thomas, Brno
Masaryk University, Brno
Mendel University of Agriculture and Forestry, Brno
Vereinigung zur Fˆrderung der Genomforschung (VFG), Vienna

Honorary Members

Dr Fred Cross, Rockefeller University, New York
Sir Paul Nurse FRS, Director, Rockefeller University, New York
Professor Emil Palecek, Institute of Biophysics, Brno
Dr Geraldine Seydoux, Johns Hopkins University School of Medicine, Baltimore
Sir Richard Sykes FRS, Rector, Imperial College, London
Dr James Watson, Cold Spring Harbor, Long Island
Professor Charles Weissmann, Imperial College, London
Dr Eric Wieschaus, Princeton University, New Jersey

Trustees of The Gregor Mendel Trust (registered charity number 1096630)

Sir Paul Nurse FRS, Director, Rockefeller University, New York
Professor Geoff Oldham, Emeritus Director, Science & Technology Policy Research, University of Sussex
Sir Richard Sykes FRS, Rector, Imperial College, London
Dr Sandy M. Thomas, Director, Nuffield Council on Bioethics
Sir David Weatherall, Emeritus Regius Professor of Medicine, University of Oxford
Simon Weil, Bircham Dyson Bell
Professor Charles Weissmann, Imperial College, London

http://www.mendel-museum.org

The Mendel Museum acknowledges the support of the City of Brno, the South Moravian Region and the Czech Commission for UNESCO.

From the Treasurer

Subscriptions Update

Please can I remind members that in Spring 2003 the membership agreed that the Society should increase its membership fees. One goal of this rise is to increase the money available to the Society to return to the membership in the form of travel grants. The annual subscription fees were raised as follows:

Full Members	**£35** per annum
Student Members	**£15** per annum

BSDB members pay their subscription to the Society through a standing order. This means that **it is the member's responsibility to instruct their bank to increase their standing order**. Unfortunately only a third of our members have updated their subscriptions. **Please take the time to update your standing order**. A form for you to complete and send to your bank is available on the Membership page of the BSDB web-site: http://www.bsdb.org. As from the beginning of the new financial year (01/08/05) **members not paying** the correct subscription **will be unable to receive travel awards** or countersign applications for membership. The Society is pushing forward with plans to collect your membership fees by Direct Debit in the future which will allow us to more efficiently collect your subscriptions from your bank accounts.

Travel grant latest

Requests for all categories of travel grant continue to exceed our budget, even with the generous contribution provided by the Company of Biologists and the slight increase in income from our subscriptions. The squeeze on resources has come from a combination of increased numbers of applicants and high meeting costs. This year however we have increased the awards grants to members to attend our own meetings to £16,104 representing a return of 72% of our subscription income back to our members. We continue to aim to offer full grants for all presenting student and post-doc members who apply for funding to attend our own meetings; up to £400 for most applicants to attend an overseas meeting; and up to £500 for most applicants to attend a course or go on a laboratory visit. Due to our budget constraints the BSDB committee decided that it would be better to spread the limited funds across more applicants, rather than fully funding some, and providing nothing to others. In order to do this the follow procedures have been adopted:-

Grants to attend BSDB meetings

All applications for travel grants to attend BSDB meetings must be in the hands of the Treasurer by the published deadline. This deadline will usually be ONE MONTH before the close of registration for the Spring meeting and at a similar time for the Autumn meeting. However, the precise dates will be published on the BSDB website and the Newsletter. These will be strictly adhered to. This will allow applications to be assessed and funds to be distributed in time for applicants to discover the size of their award before having to register or accept their place at the meeting.

***Deadline for Autumn Meeting 2005: 17th June, 2005**

Grants to attend overseas meetings and courses

Because of the multiple deadlines for registration for these meetings, it is necessary to process applications year-round. As before, applications will be collected over each month and awards will be made according to the remaining travel budget. The total amount needed will be taken into account so that an applicant who needs £1200 to attend an overseas conference will be more likely to receive the £400 maximum than one who needs a total of £500. Note:- those artificially over-inflating their request will be penalised.

Please take note of these new rules, which will hopefully allow an equitable distribution of funds among the membership.

To apply for a travel grant:

- Members should complete a Travel Grant Application form and send it to the Treasurer. **Forms** can be downloaded from the BSDB website: www.bsdb.org
- Applications for overseas meetings are advised to be made 3-4 months in advance is advised so that the BSDB contribution can be used as a lever to prise the rest of the money from other sources. Grants will NOT be awarded in arrears
- **Please note**: Nobody will be awarded more than one travel grant for an overseas trip per year.

Small Meetings

Members may approach the Treasurer for seed funding to help with organising developmental biology events (eg one-day meetings) that involve other institutions and at which students and postdocs are encouraged to attend and present work. The BSDB currently supports the meetings of several local developmental biology groups with small (~£250) annual contributions. Any further requests for this type of funding should be made in a letter to the Treasurer.

Louie Hamilton Fund

There is a small amount of money available from the Louie Hamilton Fund to provide travel support for handicapped members. Applicants should contact the Treasurer.

Summer studentships

In previous issues of the Newsletter you would have read that the BSDB Committee agreed that we wish to be able to award small grants to support undergraduates to spend their summer vacations working in a developmental biology laboratory. Our current finances have yet to be sufficient to allow us to achieve this aim. As soon as our subscriptions increase sufficiently we hope to be able to make these awards. As soon as this becomes feasible the criteria on which they will be awarded will be announced to the membership.

You can't be a student forever

Student members who joined in **2001** are reminded that they should quickly upgrade their subscription to £35 before they are **humanely culled** from our records.

Guy Tear
guy.tear@kcl.ac.uk

BRITISH SOCIETY FOR DEVELOPMENTAL BIOLOGY

FINANCIAL STATEMENT YEAR ENDING JULY 31st 2004

Accurals Basis

Balance Sheet

2002/03 £		2003/04 £
	Investments	
88,201	Baillie Gifford Managed Fund	93,489
	Current Assets	
10,188	Barclays Bank High Interest Account (1)	10,258
16,657	Barclays Bank Current Account	26,255
2,886	Barclays Bank: Louie Hamilton Account (1,2)	2,899
29,731		39,412
6,247	Less: Unpresented cheques	1,415
- 384	Debtors – Creditors	- 16,038
23,100	Net Current Assets	21,959
111,301	**Total Funds**	**115,448**

Income & Expenditure Account

Income	£	Expenditure	£
Membership (Standing Order)	16322	Grants (Overseas & Courses)	20425
Membership (Cheques)	715	Grants (BSBD Meetings)	10274
Block Grant (CoB)	25000	Small meetings and other DB meetings	959
Travel grant fund (CoB)	20000	Autumn Meeting 2003 (Nice)	6108
Sale of addresses	500	Spring Meeting 2004 (Warwick)	64420
Investment income	2190	Prizes	2770
Share of Spring Meeting income	48607	Committee & administration	3543
		Newsletter	2450
		BSF	1420
Interest and Investment Appreciation:			
Barclays High Interest a/c	70		
Barclays Louie Hamilton a/c	14		
Total Income	**113,418**	Total Expenditure	**112,369**
		Net Surplus for the Year	**1,049**
		Unrealised Gains on Baillie Gifford	3,098
		Fund balance at 31st July 2003	111,301
		Fund balance at 31st July 2004	**115,448**

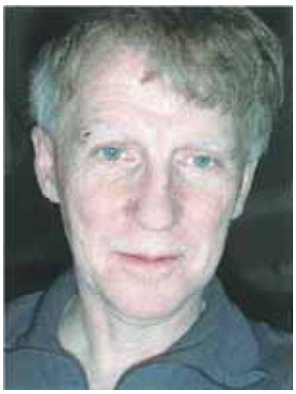
Notes

These accounts were prepared under the accrual basis convention, in accordance with the applicable accounting standards and Recommended Practice of Accounting by Charities. There have been no major changes to our financial arrangements this year.

1. The Barclay High Interest and Louie Hamilton account valuations are at 30.6.04

2. This is the only restricted account and no call was made on it in the financial year 2003/04

Dennis Summerbell, 1947-2005



Dennis Summerbell, who performed pioneering experiments on the development of the chick limb, has died at the early age of 58. He had been suffering from pancreatic cancer for 19 months, and had borne his illness with characteristic courage, dignity and humour.

I first came across Dennis in 1976, when I started as a graduate student with **Lewis Wolpert**, just three years after Dennis had finished his own PhD in the same lab. Dennis had first gone on to do a postdoc in Grenoble with **Philippe Sengel**, and by now was working in the University of Otago, New Zealand. Dennis's location on the other side of the world enhanced his almost mythical status in Lewis's lab, for he had produced a PhD thesis that was so comprehensive, so magisterial, so brilliant, that my fellow students and I (including **Nigel Holder**, **Geoff Shellswell** and **John McLachlan**) despaired of finding any new experiment that he hadn't already done. In my own PhD thesis, first author papers by Summerbell would have occupied a whole page in the references had I not, to tease him, squeezed in a Szabo reference before starting a new sheet of paper. I sometimes wonder how Dennis managed to achieve so much in such a short time, and it must have had something to do with the way he combined his great technical expertise with a deep interest in theoretical models for limb development. A rare combination then, and even more so now.

The most significant parts of Dennis's PhD thesis helped us understand how positional information along the antero-posterior and proximo-distal axes of the developing limb is specified. The work was described in two articles in Nature, the first with **Julian Lewis** and Lewis Wolpert and the second with **Cheryll Tickle** and Lewis Wolpert, and they were of extraordinary importance. The papers are cited to this day, and their significance was illustrated recently by the intense excitement that surrounded the suggestion that the so-called 'progress zone' model (in his thesis Dennis called it the 'magic zone') might be wrong. Any developmental biologist would have been delighted, and proud, if their model had managed to last for over 30 years before being questioned in a serious manner, but Dennis had cause to be even prouder, because, the recent results notwithstanding, the progress zone model remains the best way to understand how positional information is specified along the proximo-distal axis of the limb.

On returning from Otago, Dennis moved to **Mike Gaze's** Division in the National Institute for Medical Research in Mill Hill, where he teamed up with like-minded developmental biologists such as **Jonathan Cooke**, with whom he analysed cell division during limb development, **Vicky Stirling**, with whom he carried out some beautiful experiments on innervation of the limb, and **Malcolm Maden**. The partnership with Malcolm was particularly important, providing, as it did, some of the first insights into the roles of retinoic acid signalling during development. As I got to know Dennis, I came to see how this work, like all his work, was careful, meticulous, and beautifully controlled. Dennis had a strong regard for the truth and would never make any assertion unless he knew beyond doubt that it was true.

Not long after Malcolm left NIMR to go to King's College London, Dennis decided that he wanted to learn how to apply molecular biological techniques to development and he joined **Peter Rigby**, also at Mill Hill, to study the regulation of muscle gene expression in the mouse embryo. He worked on the Hox genes and on the skeletal muscle determination gene Myf5, and his characteristically painstaking and beautiful analysis of the extraordinarily complex regulation of Myf5 has been highly influential in the field. He published regularly with Peter in journals such as Development and Genes and Development and moved with him to The Institute of Cancer Research in 2000, where he continued to work at a high level even after he was diagnosed with pancreatic cancer. He did it, in spite of the pain, because he just loved doing science.

Dennis married **Amata Hornbruch** in 1971. Their house, close to NIMR, became a haven for PhD students and postdocs in developmental biology: for times of celebration, for when things were getting a bit stressful, and for when they (the younger scientists) fancied a good glass of wine; Dennis had an excellent cellar and he and Amata were superb hosts. Dennis was also a tremendous teacher and mentor of young scientists and was an important influence on many careers. He will be greatly missed by his colleagues at The Institute of Cancer Research, as well as by his many friends and admirers at Mill Hill and around the world. But no one will miss Dennis more than Amata, to whom we send our deepest sympathy.

Jim Smith, Cambridge

BSDB

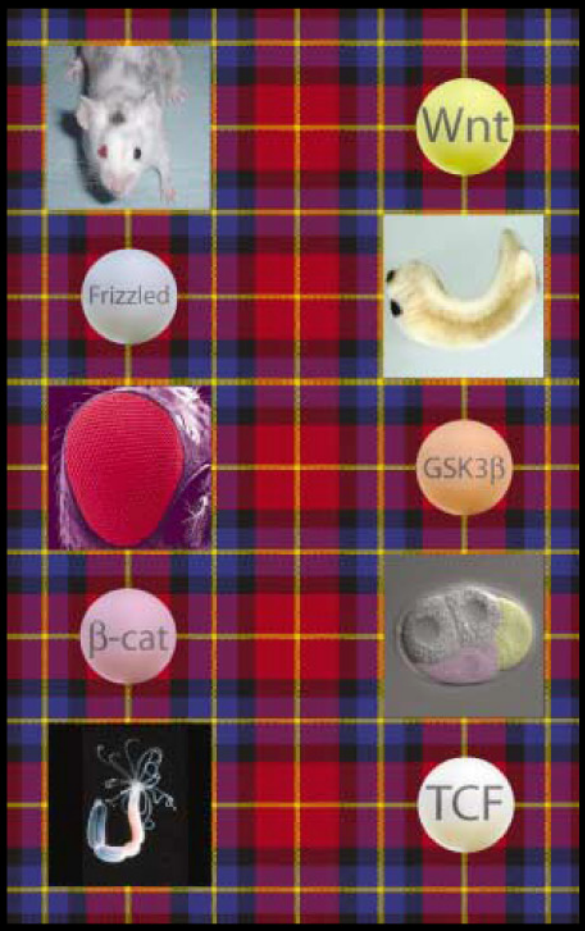
BSDB Autumn Meeting 2005

Wnt signalling in Development, Disease and Cell Biology

14th-16th September 2005

Speakers
Mariann Bienz
Alan Clarke
Hans Clevers
Trevor Dale
Bob Goldstein
Barry Gumbiner
Thomas Holstein
Rik Korswagen
Alfonso Martinez Arias
Pierre McCrea
Randall Moon
Inke Näthke
Roel Nusse
Patricia Salinas
David Strutt
Jean-Paul Vincent

Organisers
Stefan Hoppler
Jonathan Pettitt
Adrian Harwood
Pip Francis-West



Early registration and abstract deadline: 1st July 2005

For registration and more information, visit:
http://www.abdn.ac.uk/cdb/wntmeeting2005.htm

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UNIVERSITY OF ABERDEEN

Future BSDB Meetings

Spring Meeting 2006

Joint Meeting with BSCB
University of York

20th – 23rd March, 2006

The joint BSCB/DB Spring meeting 2006 will be held in York 20-23rd March, organised by **Betsy Pownall**, **Corrine Houart** and **Roger Patient**. There will be BSDB sessions on Imaging Development; Developmental Signals, HSPGs and Development, Evolution and Development, and Developmental Biology Modeling Human Disease. The BSCB sessions will focus on many aspects of Stem Cells.

The speakers will include **Cheryl Tickle, Richard Harland, Peter Holland, Nipam Patel, Enrico Coen, Charles P Emerson, Richard Adams,** and **Didier Stainier**.

Topics for Future Society Meetings

One of the major tasks of the BSDB Committee is to select topics to be covered in future meetings and then to ensure that these meetings are well organised and successful. It is obviously crucial that meetings are supported by the members of the Society, and we always welcome suggestions for future topics. If you have an original idea for:

- **a half-day theme for the Annual (Spring) Symposium**
- **a two day Autumn meeting**
- **a one day workshop**

please get in touch with the **Meetings Secretary:**

Nancy Papalopulu (np209@cam.ac.uk)

Check the BSDB website for meetings updates

Enquiries to Andrew Jarman (andrew.jarman@ed.ac.uk)

www.bsdb.org

Special Call for Autumn 2007 Meeting

If you have an idea (theme) for a 2 day Autumn Meeting (usually September), please contact the Meetings Secretary, Nancy Papalopulu np209@cam.ac.uk

'Working With Human Embryonic Stem Cell Lines'

July 4th-8th, Centre for Stem Cell Biology, University of Sheffield
Organised jointly with the UK Stem Cell Bank.

This year, the course will be available to both academic and commercial participants and will coincide with our International Stem Cell Symposium 'Progress Towards Cell Therapies' (Jul 8th). Our Symposium continues to increase in popularity and last year attracted over 200 international academic and commercial delegates, exhibitors and speakers.

This year, the centre has expanded it's training activities and is seeking applicants, both academic and commercial, wishing to participate in a new 'short and medium term visiting scientist programme'. This programme has been created to provide longer term practical training opportunities based within the CSCB itself. The Centre has already hosted a number of visiting experts and trainees under the programme and is particularly keen to encourage overseas applicants.

Provisional details for our events in 2005 and overviews of the training opportunities can be found under the training link:

http://www.cscb.sheffield.ac.uk/Training1/

Other Meetings & Courses

15th International Congress of Developmental Biologists

Sydney, Australia

3 - 7 September 2005

Plenary Program

Sydney Brenner (The Molecular Sciences Institute, UK)
Christiane Nüsslein-Volhard (Max Planck Institute, Germany)
Austin Smith (Institute for Stem Cell Research, UK)
Phil Beachy (John Hopkins University School of Medicine, USA)
Steve Cohen (EMBL, Germany)
Hiroshi Hamada (Osaka University, Japan)
Janet Rossant (Samuel Lunenfeld Research Institute, Canada)
Olivier Porquie (Stowers Institute for Medical Research, USA)
Cliff Tabin (Harvard University, USA)
Sean Carroll (RM Block Laboratories, USA)
Denis Duboule (University of Geneva, Switzerland)
Konrad Basler (University of Zurich, Swizerland)
Yuh Nung Jan (University of California, San Francisco, USA)
Elliot Meyerowitz (California Institute of Technology, USA)

Symposium Program

Juan Carlos Izpisua Belmonte (Salk Institute for Biological Sciences, USA)
Peter Koopman (Institute for Molecular Biosciences, Australia)
Robb Krumlauf (Stowers Institute of Medical Research, USA)
Brigid Hogan (Duke University Medical Centre, USA)
Phil Ingham (University of Sheffield, UK)
Neelima Sinha (University of California, Davis, USA)
Michael Akam (Univesity of Cambridge)
Thomas Edlund (Umea Center for Molecular Medicine, Sweden)
Patrick Tam (Children's Medical Research Institute, Australia)
Alex Schier (Skirball Institute of Biomolecular Medicine, USA)
Masatoshi Takeichi (RIKEN Centre for Developmental Biology, Japan)
Liz Robertson (Oxford University, UK)
Philippe Soriano (Fred Hutchinson Cancer Research Institute, USA)
David Wilkinson (National Institute of Medical Research, UK)
Didier Stainier (University of California, San Francisco, USA)
Bruce Bowerman (Institute of Molecular Biology, USA)
Ken Zaret (Fox Chase Cancer Centre, USA)
Gordon Fishell (Skirball Institute of Biomolecular Medicine, USA)
Ben Scheres (Utrecht University, The Netherlands)

Abstract Deadline 25th May 2005

For further details see: **http://www.isdb2005.com/**

Carl Zeiss LSM WORKSHOPS 2005

BRISTOL - 25 & 26 MAY
EDINBURGH - 8 & 9 JUNE

Carl Zeiss Limited will be holding a series of FREE one-day LSM Workshops in Bristol and Edinburgh, with two workshops scheduled at each venue.

The agenda includes a series of high level presentations through the morning, with the afternoon devoted to practical hands-on sessions with a full range of Carl Zeiss LSM microscopes and imaging systems. Principal amongst these is the new LSM 5 LIVE system - the world's fastest confocal microscope. You will be able to meet some of the key people behind this revolutionary instrument's development and be able to work with this microscope and other LSM's in the practical sessions.

To view the full agenda, see a list of the demonstration microscope systems, and book your place at one of the workshops, please go to the Zeiss Roadshow online facility.

http://www.truepr.co.uk/news/zeiss/0505a/072.asp?3225061-618434-802098-934908

Opening Symposium of the Gurdon Institute, University of Cambridge

23-24 June 2005

To mark the opening of our new building, and to honour our eponymous founding Chairman, the Gurdon Institute is holding a symposium in which leading experts in cell, developmental and cancer biology will tell us about their latest work.

List of speakers:

Adrian Bird (Wellcome Trust Centre for Cell Biology, UK)
Helen Blau (Stanford University School of Medicine, USA)
Bruce Bowerman (Institute of Molecular Biology, USA)
Eddy De Robertis (Howard Hughes Medical Institute, USA)
Scott Fraser (Caltech, USA)
Brigid Hogan (Duke University Medical Centre, USA)
Tom Jessell (Columbia University, USA)
Marc Kirschner (Harvard Medical School, USA)
Ron Laskey (MRC Cancer Cell Unit, UK)
Ruth Lehmann (HHMI & Skirball Institute, USA)
Jennifer Lippincott-Schwartz (NIH, USA)
Doug Melton (Harvard University, USA)
Nadia Rosenthal (EMBL, Italy)
Julie Theriot (Stanford University, USA)
Cheryll Tickle (Wellcome Trust Biocentre, UK)
Richard Treisman (London Research Institute, UK)
Marvin Wickens (University of Wisconsin-Madison, USA)
Eric Wieschaus (Princeton University, USA)

http://www.gurdon.cam.ac.uk/symposium2005/index.html

Check out the BSDB Meetings Website for further meetings
http://www.bms.ed.ac.uk/services/webspace/bsdb/Bsdbmeetings.htm

Book Reviews

Inborn Errors of Development: the molecular basis of clinical disorders of morphogenesis

Eds C.J. Epstein, R.P. Erickson, A. Whynshaw-Boris
Oxford Monographs on Medical Genetics No 49
Oxford University Press 2004.
ISBN 0-19-514502-X

One of the things that **Veronica van Heyningen** always used to point out to me was that humans look after their differences and that the genetic anomalies in Homo sapiens are a vast, often untapped, resource for understanding the molecular basis of development and disease. Conversely, **many of my medic friends still seem to fail to appreciate that an understanding the molecular basis of development provides great insight into the mechanism underlying many human diseases.** This ambitious, well illustrated book must therefore be one of the first to try and bridge this gap.

It starts with 4 chapters on the general concepts, discussing such topics as the genetic basis of human malformations, principles of morphogenesis and using model organisms and the genome projects to understand development and disease. The next section is an up-to date synopsis of different developmental processes with each of the 10 chapters written by recognised leaders in their field. The final 3 segments which make up 4/5 of the 1000 pages describes over 100 clinical genetic disorders arranged into sections by defined developmental pathways (e.g. Shh, Wnt, TGF-b, FGF), gene families not yet in pathways (e.g Hox, Pax amd T-box) and an all encompassing section called 'processes' that includes topics on regulation of chromatin, transcription factors, extracellular matrix and angiogenesis. Although **you may quibble about which section your favourite gene should really be put into**, the one thing you cannot complain about is the effort that has gone into producing this tome.
Does it succeed ?– I think in general the answer is 'yes'. Would I recommend buying it? - well the answer is probably 'recommend it to your library' . It is expensive and from its very nature, it will quickly become dated as our understanding of the developmental processes and the genetic basis of dysmorphology improve. However having said that, I will enjoy dipping into it whenever I need to bridge that animal model/ human dysmorphology gap.

Pen Rashbass, Sheffield
p.rashbass@sheffield.ac.uk

Phenotypic Integration – studying the ecology and evolution of complex phenotypes

Eds M. Pigliucci and K. Preston
Oxford University Press ISBN: 0195160436

It is popular these days to look back to the roots of developmental biology and to acknowledge that the split between developmental biology, on one side, and ecology and evolutionary biology on the other, is unfortunate. EvoDevo is a step to overcome this problem. The term Ecological Developmental Biology was also coined a few times recently. Although evolutionary biologists are generally not too bothered with mechanistic knowledge (which is a common focus of developmental biologist), they become more and more aware of the importance of looking at juvenile stages of all sorts of organisms. However, both fields have in common that most research examines single traits, rather than relating the mechanism or morphology back to the whole organism. This is the gap this book aims to fill conceptually as well as with case studies.

So what is phenotypic integration? Despite the diversity of definitions in this book it all seems to boil down to an increased genetic and functional relationship between traits. An illuminating example is given by the studies on the architecture of the Dalechampia blossom in chapter 2 by Armbruster and co-workers. **Changing a single trait within the blossom might screw up the whole pollination process, so parallel change in traits is required.** This seems to be very obvious. However, tackling such issues statistically, and more widely, conceptually is a different matter. Such tools and models are now available and are used in many of the book chapters.

My favourite chapter is by Hansen and Houle which, in a nutshell, asks the question **why do we not see much more evolutionary change**? The assumption of such rapid changes underpins many biological subdisciplines. Here developmental and evolutionary biology clearly meet: **developmental constraints could be a widespread cause for the lack of evolutionary change in many species.**

Some of the articles tackle ambitious topics, as reflected by titles such as "Multivariate phenotypic evolution in developmental hyperspace". The chapter by Wolf et al. in particular provides an insightful introduction to the use of the "phenotype landscape" approach: plainly speaking, it offers a tool to investigate how developmental processes influence evolutionary processes.

Why should one read this book? If you are interested in the organisation of the whole organism and getting an overview of some important recent developments in evolutionary biology, **this book is a very good choice**. I found the breadth of topics covered inspirational, and it made me think differently about many issues in my own field of expertise. Moreover, this book is also a very good read for anybody interested in another topic that recently experienced a renaissance: phenotypic plasticity. **And finally, it is not only funding bodies such as the BBSRC that acknowledge more and more the importance of the whole organism perspective.**

Most reviewers feel obliged to say something negative about a book they just praised. Except from the fact the styles of the contributors differ, as do more importantly the definitions of 'phenotypic integration', **there is nothing really I didn't like**. And these differences are the very nature of an edited volume and a reflection of a very active field of research.

Jens Rolff, Sheffield
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Book Reviews

Genesis: The Evolution of Biology

Jan Sapp
Oxford University Press
ISBN 0195156196 2003

In his book 'Genesis: The Evolution of Biology' Sapp examines the evolutionary hypotheses that have developed over the past 300 hundred years. Using four broad themes: evolution and morphology, the cell in development and heredity, genetics and the classical synthesis and molecular biology and organismic complexity, he **manages to distil the long and eventful history of evolutionary biology into a well encapsulated manuscript.**

The sections that discuss the early evolutionary thinking, developed during the late 17th early 18th centuries, present an apt synopsis of this era although it is difficult to identify with some of the ideas from this period, as social and religious opinion impacted greatly on biological thinking. Nevertheless **it is worth the slog** as it is essential for putting in context the theories of evolution that followed.

In particular I enjoyed the area which concentrated on the early foundations of embryological science as it **highlights the reciprocal influences and parallel expansions of the fields of developmental and evolutionary biology.** It recounts the experiments preformed by early embryologists in investigating questions such as the role of the egg cytoplasm in controlling development, cell fate determination and the establishment of body plans, all of which are of great interest to developmental biologists today. Sapp manages to convey well the circumstances that led to the formulation of many classical embryological experiments and reveals how researchers **processed great insights even though few facts were known**.

The book follows on by presenting an interesting exploration of how the theory of evolution was adapted into the age of molecular biology. It is much easier to relate to the views presented here as they are those which are held or argued by current evolutionary scholars and the context is more familiar to today's reader. Genesis concludes by introducing some of the questions troubling evolutionary theorists today e.g. what is the evolutionary significance of symbionts? And what is the role of kin selection in evolution? All of which are very thought provoking.

Interestingly, Sapp **chooses not to focus on alternative theories such as intelligent design** or other creationist "sciences" beyond the first half of 20th century, instead concentrating on evolutionary theory alone in modern times. This could have **an obvious impact on sales in certain countries.**

I would recommend this book to any student of developmental biology who desires to learn about the history of evolutionary theory. It is also a good resource for students of evolution who wish to learn about its history and put in context the ideas of today's evolutionary theory. It is well researched and is suitable as a reference text though **perhaps less a bedtime read than a bookshelf resource**.

Derina Sweeney, Edinburgh
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Tissue Engineering – principles for the design of replacement organs and tissues.

W. Mark Saltzman
Oxford University Press
ISBN 0-19-514130-X 2004

This is a well-written monograph based on lecture notes for a course on tissue engineering to undergraduates in Engineering. The chapters are well-laid out and easy to follow. The book is divided into convenient sections with Part 1 reviewing the history of tissue engineering (TE), outlining the possible indications for engineered tissues and organs and summarising the elements of cell-polymer interaction involved in TE. Part 2 deals with the fundamentals of cells as may be relevant to the undergraduate engineer developing an interest in TE. Part 3 deals with cell delivery and interactions with the matrix and with polymers, concluding with a section on 'real life' TE applications. The chapters are well-referenced and there are a few exercises at the end of each chapter providing the reader with an opportunity to test recall of the factual content in that chapter.

Although well written, **the approach is highly mathematical and reflects the target audience of engineers rather than biologists.** Having said that, the sections on cell adhesion and extracellular matrix contain a good summary for the reader without the need for an in-depth knowledge of cell biology.

The final section on applications of TE is clearly written, but as is often the case in a rapidly changing field, the examples chosen are out of date, particularly with regards to the use of TE skin for burns patients, which has moved on apace, particularly in Sheffield.

I would recommend this book as a good introduction for someone interested in the maths of cell biology or someone with a background in maths or engineering looking to enter the field of tissue engineering.

Derek Rosario,Sheffield
d.j.rosario@sheffield.ac.uk

Books for Review

I always **welcome suggestions for future book** (& meeting) reviews. If you know a book (or meeting) you think should be reviewed, please contact me (**Andrew Jarman**). For books, I will arrange for a copy to be sent to you gratis. Here is one suggestion:

Biomedicine and the Human Condition: Challenges, Risks and Rewards
Michael G. Sargent
Cambridge University Press 2005
ISBN-10: 0521833663

BSDB Committee Members

The main function of the BSDB Committee is to organise our meetings, from deciding on appropriate topics to arranging organisers and venues. If you have any ideas on topics for a good meeting, or on a good venue, don't hesitate to convey them to Nancy Papalopulu (or another committee member). The officers of the society will be happy to answer any questions relating to their specific subjects.

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