BSDB Newsletter

Summer 2007

Vol. 28, No. 1

British Society for Developmental Biology

www.bsdb.org

BSDB Meeting 2007 in Edinburgh

Autumn Meeting 2007:
Systems Approaches to Development
Sheffield
(see p13)

Also in this issue:

Editorial

Here at last is what you've all been waiting for since last November. It's been a race against time to get this issue out. This is a busy time of the year for many academics, myself included, what with marking and exam boards piling up.

There is not a lot to say that isn't already covered elsewhere in this newsletter, except of course to thank all of those who have very willingly contributed articles. I'm particularly pleased to be able to reproduce Liam Keegan's book review on p19 — it is in fact an entertaining and thought-provoking commentary as much as it is a review.

Andrew Jarman, Editor

andrew.jarman@ed.ac.uk

Contents

Help us spread the word

Please print out a copy of this newsletter and leave it in a strategic place, such as your coffee room or staff room.

Cover image

BSDB/GenSoc/BSCB Spring Meeting – poster session and students lunchtime talks

From the Chairman

This year's Spring meeting was another great success. It was held jointly with the BSCB and the Genetics Society, so it covered a very wide range of top level science. The venue was a new one for us — Heriot-Watt University, just outside Edinburgh. Despite the prior uncertainty by various pampered southerners, who have become used to Warwick, or possibly York, being about as far north as they feel happy travelling, Heriot-Watt was deemed to be an excellent site with good facilities and a nice bar. I have to confess that I report this second-hand, as I was this year unable to attend — an embarrassing diary mismanagement. This means that as well as thanking the BSDB scientific organisers of the meeting – David Wilkinson and Alison Woollard – I want to add personal thanks to those members of the committee who bailed me out, especially Robert Kelsh, who somehow managed to fulfil simultaneously the functions of Secretary and stand-in Chairman, a particular feat at the AGM.

"Despite the prior uncertainty by various pampered southerners … Heriot-Watt was deemed to be an excellent site with good facilities and a nice bar,"

One of the nicest parts of the Spring meeting, and therefore the things I missed most this year, are the medal presentations. The Waddington Medal is the most distinguished UK award in developmental biology, and was this year won by David Ish-Horowitz of CRUK, for his work in many fields, but probably most famously *Drosophila* development and pattern formation. Elsewhere in this newsletter Robert Kelsh has written about David's achievements and his award lecture. The second annual BDSB award is the Beddington medal, in memory of Rosa Beddington, which is given each year to the best developmental biology PhD thesis. The Beddington medal is now well established and every year the committee face a difficult decision, with many excellent theses submitted. This year it was awarded to Rebecca Bastock, who did her PhD on planar cell polarity in David Strutt's group in Sheffield. Congratulations to Becky, and remember to nominate your students (or get yourself nominated by your supervisor) for next year's medal.

2007 brings significant turnover of the BSDB committee. We are losing Alicia Hidalgo, David Wilkinson and Alison Woollard, as well as our graduate student representative, Raphaela Kitson-Pantano. In their place, Josh Brickman, Juan-Pablo Couso and Andrea Münsterberg were elected at the AGM, and a new grad student representative will be chosen soon. Alicia has not got away scot-free, as she is co-organising next year's autumn meeting in Seville – more news soon. David has done a huge amount to develop the educational side of the BSDB and produced outstanding resources for lay people and school students (see the website). As mentioned above, Alison was co-organiser of this year's Spring meeting. Raphie was an exceptionally imaginative and active graduate representative who has energetically promoted our activities for students and made BSDB meetings more welcoming and sociable. The whole society owes a debt of gratitude to the outgoing members for their work, and I also want to thank them personally for their contributions.

I finish on a more political note. There was a surprise announcement from the Government in February that, despite previous assurances that science funding was ring-fenced, the research councils' budget was to be cut by £68 million pounds to help balance other parts of the DTI budget. This is supposed to be a one-off cut, but is clearly very damaging, and shows a degree of contempt for the ring-fencing guarantees. A petition calling for a reversal of this plan is on the Downing Street website and as it directly affects all members of the BSDB, I urge everyone to sign it at http://petitions.pm.gov.uk/reseach/. As I write there are 8361 signatories and the deadline is June 12th.

Don't forget the BSDB Autumn meeting on systems biology, which is looking excellent, and I hope to see you all at a BSDB meeting in the near future.

Matthew Freeman

Hello, goodbye — committee changes

There have been a number of changes on the BSDB committee. We say goodbye to Alison Woollard, David Wilkinson, and Alicia Hidalgo. Their places are taken by three new members who were voted in at the 2007 AGM in Edinburgh from a field of six candidates. The new committee members represent a good spread in terms of research interests and geography:

Juan Pablo Couso from the School of Biological Sciences, University of Sussex. Juan Pablo works on *Drosophila* limb patterning.

Josh Brickman from the Institute for Stem Cell Research, University of Edinburgh. Josh works on mesendoderm development in Xenopus, mouse, and ES cells.

Andrea Münsterberg from the School of Biological Sciences, University of East Anglia. Andrea works on mesoderm specification and patterning in chick.

Have your say

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

Constitutional change — welcome to devolution!

At the 2007 AGM, members voted for a minor amendment to the BSDB constitution. As Guy Tear pointed out, one of the consequences of devolution is that Scotland has its own charities regulator. The regulator has exercised their independence by stipulating a small change to clause 2 of the BSDB constitution. Basically this clarifies the definition of 'charitable purpose'. It's quite difficult to spot the difference, but it allows BSDB to be registered as a charity in Scotland.

The new Clause 2 in full:

2. Throughout this constitution a 'charitable purpose' is a purpose that is regarded as charitable both in the law of England and Wales and in the law of Scotland, and the term 'charitable' is to be interpreted in accordance both with the law of England and Wales and the law of Scotland.

The Academy of Medical Sciences — new careers website

On April 25th the Academy of Medical Sciences will be launching a new website on careers in biomedical research. The website is designed to act as a portal for information, links and career opportunities for undergraduates, post graduates, post doctoral researchers and anyone considering a career in biomedical science. Please visit: http://www.academicmedicine.ac.uk/

Plea for JEEM donations

The Company of Biologists is looking for donations. No, not monetary donations – those pleas usually go *from* us *to* them! This is from Jane Alfred, Executive Editor of *Development*:

"We need donations of early volumes of JEEM - *Journal of Embryology and Experimental Morphology* (*Development's* predecessor), which we want to digitise and make freely available on our website. Unfortunately the conversion does result in destruction of the journals as they are despined in order to feed them through the scanning robot, so we do need donations rather than loans."

The volumes needed to complete their set are: 1-14 and 28,29,30 and 82,83, 89 and 97. Please contact Jane if you can help (jane@biologists.com).

Do your contact details need updating?

As always, it's a hard job keeping the database of the Society membership up to date. If you change your address, please remember to send us the details. You can use a new online feedback form to give us this information.

http://www.bms.ed.ac.uk/services/webspace/bsdb/Bsdbfeedbackform3.htm.

Financial report

"Company of Biologists increases their support to £25,000."

I am pleased to report that the Society continues to be in good financial health. However, there is always room for improvement, and the Secretary and I are chasing up those members of the Society who have still not updated their subscriptions to the amounts announced in 2004! We need to maintain the Society on a good financial footing to allow us to preserve our funding, to continue to run successful meetings and, importantly, to continue the provision of significant numbers of travel awards for BSDB meetings. We awarded £21,420 to members to attend the Spring 2007 meeting. The generous support of the Company of Biologists also allows us to support members to travel to meetings or courses overseas. We receive considerable demand for these awards and I am pleased to report that the Company of Biologists have increased the amount available to us for these awards from £20,000 to £25,000. The BSDB adds to this pot and I hope to be able to make an award to each fully eligible applicant.

Guy Tear

Subscription information

Are you paying your fair share?

We still have a 'hard core' of members who are paying less than they should. Please check your standing order today and update if necessary!

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

Currently 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. 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 website: http://www.bsdb.org.

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.

Student members

Student members who joined the Society prior to 2003 are politely reminded that they should now upgrade their subscription to the full member rate of £35.

Easier payment option for overseas members

It is possible to pay your subscription by PayPal. This facility is primarily aimed at our overseas members. The process is fairly painless and full instructions can be found on our webpage.

http://www.bms.ed.ac.uk/services/webspace/bsdb/BSDBpaypal.htm

Travel grants

BSDB Spring and Autumn meetings

These are the only UK meetings for which there is BSDB support, grants cover cost of registration (but not conference dinners) and basic travel if funds permit. Currently we are receiving more applications than we can fund in full and preference is given to student members who present posters. BSDB members based abroad are eligible for a contribution (max. £400) to attend our meetings. All applications for travel grants to attend BSDB meetings must be in the hands of the Treasurer by the published deadline.

The deadline for Autumn Meeting 2007 is 1 June 2007

Overseas meetings

There is considerable demand for funds to travel to meetings overseas. Applications are collected each month and a decision on awards made at the end of the month, with funds awarded according to the remaining budget. To allow us to fund as many applicants as possible we are currently limiting awards to a maximum of £400. The total amount needed is taken into account when deciding the amount of the award; however, those artificially inflating their request will be penalised. Preference is given to members presenting work at the meetings.

Practical courses

The BSBD will also provide funds up to a maximum of £500 for members to attend courses or to visit laboratories overseas. These applications are considered alongside those for overseas meetings.

Applying 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 submitted 3-4 months in advance 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 per year for an overseas trip. No more than two people from one department or one person from a group will be awarded a grant to a particular meeting.

Deadline for Autumn Meeting: 1 June 2007

Warning!

Only members paying the correct subscription to the Society will be eligible for a Travel Grant

Seed funding for small meetings

Members may approach the Treasurer for seed funding to help with organising developmental biology events (e.g. one-day meetings) that involve other institutions and at which students and post-docs 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.

The Graduate Students' Section

Goodbye and thank you

This is my last newsletter as a student rep. I am finishing my PhD shortly and will be retiring from the position.

I would like to thank all of you students who have helped me throughout these past three years make the BSDB student community what it is. We have had two very successful student socials and one student workshop. We have designed our own T-shirts and given out our own poster prizes. Beyond anything else, we have created a means of communicating across the country and have successfully created a student network.

May this continue and although I will not be a student for much longer I look forward to staying in touch with all you soon-to-be-post-docs!

I would like to thank the members of the BSDB committee for all their support and patience in this formidable adventure and finally I would like to thank Jo Young the Gen Soc rep for the tremendous fun we had whilst organising the student activities.

Best of luck to the new student rep!

Raphaela Kitson-Pantano
3rd year PhD, University of Edinburgh, s9902690@sms.ed.ac.uk

It's up to you!

It's not up to me anymore! The new student rep will be taking over the student section of the BSDB newsletter. Show him/her you liked the tips and unusual stories and send them to me, (I'll pass them on). If you wish to remain anonymous let me know but in all cases could you please give me your name, the name of your institution and your year of study!

Student ambassadors

A big thank you to all the students who helped out with the organisation of the Edinburgh Spring 2007 conference. Your support was invaluable.

Let me know if you would like to be a student ambassador for your University. The job involves advertising the BSDB society to fellow students as well as the newsletter and encouraging people to write for the newsletter. This is a great quality to put on a CV and it is also a rewarding activity. Please email me ASAP if you would like to take part in this initiative.

Tip of the day

Speed up your restriction digests by putting them in the microwave for 30 seconds! Don't forget to add an undigested control!

Facebook — keeping in touch

This is now on the road. People have signed up and are using this as a successful means of communicating. Don't miss out. Sign up now. It's easy! Just log on to www.facebook.com. Register if you are not already a member and join the BSDB graduate student group.

BSDB T-shirts

BSDB-only T-shirts are now available. Check the website and order yours!

Student membership rates

"If you are not paying £15 for your student membership, you're not paying the correct amount!", said our society Treasurer. Make sure you are paying the right amount or you might not be awarded travel grants or other benefits when you next apply.

Drosophila *go on holiday!*

Our building will soon be fumigated so as to create a new clean and safe animal house upstairs from our fly room. Our Drosophila *need to be evacuated during the procedure and are going on holiday down town. Ma Lina, 1st year PhD student, Edinburgh University.*

Writing for the newsletter

Why not submit something to the newsletter? If you wish to remain anonymous about your easy tips and your stories, let me know, but in all cases could you please give me your name, name of institution and year of study.

Questions? Complaints?

Is there anything you would like the student rep to raise for you at committee meetings? Anything you would like to discuss? Don't hesitate to email me (I'll pass it on). I look forward to hearing from you soon.

s9902690@sms.ed.ac.uk

BSDB/GenSoc/BSCB Student Social — Edinburgh 2007

The student social was once again a terrific success! Together with Jo Young, the GenSoc rep, we organised an evening full of drinks, nibbles and laughter! It was an opportunity to catch up with the students met at last year's student social and meet new ones.

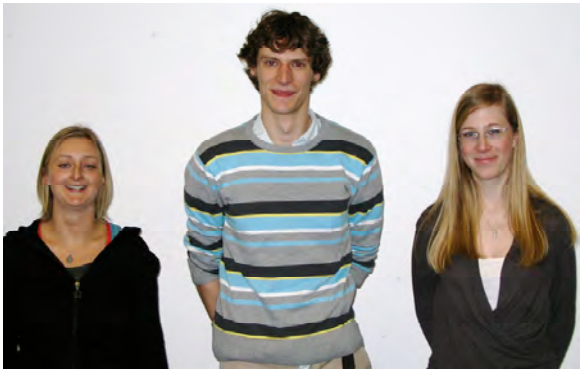
Student-only T-shirts were given out for free (these were very generously funded by the three societies). They were black, female- and male-specific and had the logo of the three societies on them. Wearing them was a chance to advertise the societies and identify who among the crowd of conference attendees were students. We look forward to next year's design!

Students not wearing their T-shirts at the social event.

BSDB/GenSoc/BSCB poster competition winner

The winner of our first BSDB/GenSoc/BSCB student poster competition was Jenny Pennack, 3rd year PhD student at Birmingham University in Alicia Hidalgo's lab, for her poster: "A neutrophin homologue in the central nervous system of Drosophila*". Well done Jenny!*

BSDB/GenSoc/BSCB lunchtime student workshop



Three students, Dan Hancock, Elisabeth Rideout and Anna Chapman, gave terrific talks at our Student Workshop: *Talks by students for students*. The workshop was attended by over 100 students. This was an opportunity to socialise and talk science among ourselves, away from the PI-post-doc pressures. Dan's description of the event can be found elsewhere in this newsletter.

Thank you to Kathryn Foster of Procon for her help in organising this event.

David Ish-Horowitz: Waddington medal winner 2007

Conrad Waddington (1905-1975) was one of the most original and influential scientists, a real polymath, of the 20th Century. He started out as a geologist but became an embryologist, making multiple major contributions to embryology and genetics, including, for example, developing the concept of an epigenetic landscape to depict the choices faced by cells in developing embryos. His contributions still have a strong influence decades after his death. The BSDB awards the Waddington Medal primarily for outstanding research achievement by a UK-based developmental biologist. The choice is never easy: this year, the BSDB committee awarded the Waddington Medal to David Ish-Horowitz.

David (right) receiving his gong from BSDB secretary, Robert Kelsh, who also wrote this piece.

"…the Waddington Medal also recognises contributions to developmental biology more broadly, for example through teaching, mentoring or intellectual leadership. David fits these criteria to a tee."

David is well known to many BSDB members. Born in 1948, he studied at Cambridge, where he also did his PhD in the MRC LMB, studying transfer RNA. He post-doc'd with Walter Gehring at the Biozentrum in Basel, before becoming a research scientist at ICRF, now CRUK, where he has stayed throughout his subsequent career. He became a Principal Research Scientist there in 1987.

His scientific breakthroughs have often resulted from a keen interest in new techniques as they are developed and then a certain bravery in daring to try to rapidly apply those techniques to the analysis of developmental biology. This approach has resulted in many outstanding scientific contributions on the molecular and cellular bases of spatial organisation and cell diversity, primarily in *Drosophila* but extending too to vertebrates. His key contributions include the importance of transcriptional co-repression in regulating gene expression during development; mechanisms of mRNA localisation; development of an injection assay for mapping *cis*-regulatory elements; and early evidence for a molecular 'segmentation clock' underlying somite formation in vertebrates.

As well as outstanding scientific achievements, the Waddington Medal also recognises contributions to developmental biology more broadly, for example through teaching, mentoring or intellectual leadership. David fits these criteria to a tee, having a fabulous reputation as a mentor and enthusiastic generator of ideas. He is always interested in other peoples' work and many of his current and former colleagues can cite examples of how advice he has given has proved very influential in their pursuit of their own work. Furthermore, he has made extensive contributions in serving various Editorial Boards, e.g. of Cell and Faculty of 1000' and Advisory Boards, including that of the MRC.

In summary then, David is a superb scientist who has built a career on being amongst the first to apply novel technical approaches to understanding gene function in development; his lab has generated many gifted contributors to the field, including Phil Ingham, a former Chair of the BSDB; he is a generous friend, insightful in his discussions about science and often leads his colleagues to critical experimental approaches to explore their scientific problems. David has been recognised for his enormous achievements on many occasions in the past, for example by being elected a member of EMBO in 1985, and a Fellow of the Royal Society in 2002. He also has a specific entry in Wikipedia!

The award of this medal comes not without cost, for the expectations of the acceptance lecture are high – a witty, historical account, accompanied by sage advice for the aspiring scientists in the audience. David lived up to these high demands with a witty account of his career. His suggestions for success included surrounding yourself with as many clever people as you could, being lucky (but making your own luck too), and working with tall people!

Beddington Medal

Congratulations to ***Rebecca Bastock*** *(University of Sheffield), who was awarded this year's Beddington Medal for her outstanding thesis on planar polarity in* Drosophila.

News from the Biosciences Federation

The Biosciences Federation is seriously concerned about the loss of practical skills across the full range of the biosciences. That is, from ecology to *in vivo* pharmacology and from taxonomy to biochemistry. The biosciences are practical subjects, and yet in our schools and universities the amount of practical experience that students acquire continues to diminish. This decline is likely to continue because we have lost and are losing teachers with practical skills.

For my A levels we went out into the fields and threw metre squares “randomly” on patches of grass and then proceeded to count the number of certain plants and insects within the square. Many of you will have had a similar experience at school or university and will probably remember, as I do, the enjoyment of these outings – and not just for getting your square around someone’s neck! But this is now a rare educational activity. And the loss of training in field work is important because, for example, the subtle change in the distribution of lichens is an indicator of climate change. We have lost many lichenologists, and many of those who remain are close to retirement. To embark on a project in the field in this area now requires more than the usual attention to the competence of your supervisor: you could find yourself working on wrongly identified lichens.

The same is true for scientists with *in vivo* skills. Once again, I have fond memories of tracing dogfish cranial nerves – well, perhaps not so fond because I was not addicted to formaldehyde! But it was an introduction to animal work and developed a real awareness of how nerves pass through tissue and bone. The work brought a three dimensional understanding of line drawings and excited interests that I suspect would not have been ignited without this experience. Some will argue that a prosected dogfish can provide nearly all these educational elements – it is a debate that those involved in medical education know well. Nonetheless, some practice on cadavers seems preferable to the alternative for veterinarians, doctors and those using animals for research. Today, the pharmaceutical industry has great difficulty in recruiting in this area because few are qualified for the work.

Of course, not all bioscientists need to throw metre squares and cut up dogfish in order to make a research or teaching career in one of our disciplines. However they are likely to need to make up reagents correctly and this is not a skill that one can anticipate today in all graduate students. The point is, the decline in practical skills threatens the strength of the biosciences.

How has the present situation arisen? There is no single answer to this question, but the expansion of university bioscience courses is an important component of the answer. With doubling, trebling and quadrupling of student numbers in the biosciences, it has often proved too difficult to find and pay for the space and staff to enable practical work of a high standard to continue. Indeed, as you will know, many courses are structured to minimise the need for practical training. It is possible today to do an Honours degree in Pharmacology and, if you are predicted to obtain a lower second class degree, your Honours project will be in the library. Graduates lacking practical skills will not usually attempt to find the time for more practical work when teaching in secondary schools.

What can be done to reverse this deteriorating situation? Clearly, motivation and money are needed. Motivation comes from need and leads to money. The ecological and *in vivo* examples given above were chosen because they are in areas where the need is real and so is the possibility of extra resource. We do not think that we can usefully argue for an all-embracing single step solution to this problem, but we do think that we can target areas and work with others to achieve change. Indeed, we are quietly achieving significant success through the work of our Animal Science Group and our Education Committee. The loss of practical skills is now part of the national agenda and resolution of particular needs is being discussed in a positive way with Government and those involved with education.

Richard Dyer
BSF

BIOSCIENCES FEDERATION

Are you a postdoc or graduate student looking for a job? If you are, you should find a new page on the BSF web site helpful (http://www.bsf.ac.uk). This page provides links with very many of the sites that you might want to look at for job advertisements.

BSDB Autumn Meeting 2007

Latest meetings news

Check the BSDB website for latest meetings updates and to submit details of meetings to be advertised to members. http://www.bsdb.org

Systems Approaches to Development

University of Sheffield. 5–7 September 2007

Organisers: Andrew Fleming, Alfonso Martinez-Arias, Nick Monk.

There has been a recent surge in interest in the incorporation of modelling approaches in developmental biology. This meeting aims to provide an overview across a range of biological systems and levels of organization of the progress that has been made in this emerging area of developmental biology. The approaches include quantitative aspects of developmental biology, the acquisition of large-scale data sets and the use of mathematical and computational techniques to interpret these data. The meeting will be of interest to a broad spectrum of developmental biologists, as well as systems biologists and modellers with an interest in development.

Speakers include:

Richard Adams (UK), Malcolm Bennet (UK), Enrico Coen (UK), Marcos Gonzalez-Gaitan (D), Dirk Inze (B), Johannes Jaeger (UK), Hans Othmer (USA), Luis Serrano (D), James Sharpe (E), John Tyson (USA), Lewis Wolpert (UK)

Future BSDB meetings

Ideas for a meeting?

A major task of the BSDB Committee is to host high quality scientific meetings. We welcome suggestions for future topics for meetings or for a half-day themed session at the Spring Symposium. Contact Nancy Papalopulu

BSDB Spring Symposium 2008

Warwick, 31 March – 3 April 2008

Joint Symposium with BSCB.

BSDB organisers: Mike Taylor and James Briscoe

Participants will include Sean Carroll, Eileen Furlong, Margaret Buckingham, and Helen Blau.

Autumn 2008

Seville, Spain, 24–27 September 2008

Joint meeting with Spanish Society for Developmental Biology.

Organisers, James Castelli-Gair, Acaimo Gonzales-Reyes, Alicia Hidalgo, Robert Kelsh.

Spring/Autumn 2009

Edinburgh International Conference Centre, Edinburgh, Scotland, 6–10 September 2009

The Spring and Autumn meetings will be subsumed in the ISDB 16th International Congress of Developmental Biologists.

Other meetings of interest

The evolution of animals: a Linnean tercentenary celebration

18-19 June 2007
Royal Society, London
Organised by Max Telford and Tim Littlewood for the Royal Society and Linnean Society.
http://www.royalsoc.ac.uk/event.asp?id=4163&month=6,2006

American Society for Cell Biology and European Forum Summer Meeting

27-30 June 2007
Dijon, France
http://www.ascb.org/meetings/summer/

British Society for Cell Biology Autumn Meeting

9-12 September 2007
St Catherine's College, Oxford
http://www.kcl.ac.uk/kis/schools/life_sciences/biomed/bscb/meetings/index.html

20th European *Drosophila* Research Conference

12-14 September 2007
Vienna, Austria
Organising committee: Barry Dickson, Krystyna Keleman, Jürgen Knoblich, Leonie Ringrose, Christian Schoetterer
http://www.imp.ac.at/EDRC2007/

Wellcome Trust Scientific Conference: Evolution of Brain, Behaviour and Intelligence

12-14 September 2007Co-organisers: Seth Grant, Wellcome Trust Sanger Institut; Svante Paabo, Max Planck Institute for Evolutionary Anthropolog; Nicola Clayton, University of Cambridge.

This joint Wellcome Trust/*Science* meeting brings together scientists from different disciplines studying the evolution of the brain and cognition in humans and other animals.

Molecular evolution—Human brain molecular evolution—Evolution of brain/CNS development—Evolution of cognition—Comparative cognition—Evolution of psychiatric disorders

For further information on confirmed speakers, registration fees and an on-line registration form please visit:
http://firstcontact.hinxton. wellcome.ac.uk/

Brain Imaging Symposium

3-4 December 2007
Royal Institute of British Architects, London
Sponsored by New York Academy of Sciences, among others.
This symposium will address neuroimaging in the context of a progression from genes to molecules to cells to organs to

Latest meetings news

Check the BSDB website for latest meetings updates and to submit details of meetings to be advertised to members. http://www.bsdb.org

Meeting Reports

BSDB/BSCB/GenSoc Spring Symposium 2007

Edinburgh Conference Centre, Heriot-Watt University, Edinburgh
29 March–1 April 2007

A short account of the 'Talks for Students by Students' session by ***Dan Hancock,*** *School of Biosciences, Cardiff University*

"Congratulations! Your abstract has been chosen and we would like you to give a student talk at the BSDB/BSCB/GenSoc Edinburgh Spring conference."

Unfortunately this email was not junk mail, or a joke, or the prize in a Reader's Digest competition that I could just ignore and throw away. I read on.

"Of course, all students who give a talk are still expected to present a poster as well."

Great. I don't even get out of that then.

"The idea behind it was that it would give students the chance to present their work in an informal, relaxed atmosphere"

Except that, actually it was great. Both being an opportunity for me to talk enthusiastically about my work to people who were interested in it (or at least did a convincing job of pretending to be) and get feedback and ideas from them.

The 'Talks by Students for Students' was introduced to the conference for the first time this year. The idea behind it was that it would give students the chance to present their work in an informal, relaxed atmosphere, and also, importantly, for other students to feel comfortable to ask questions about the work afterwards. Both of these are good things. Because though we might not necessarily want to stand up and give presentations, it is paramount that we do so (and do so well). Also, as I am certain you have heard from supervisors on numerous occasions, students don't ask questions in seminars enough when, as scientists, we should be asking questions all the time. So we should be very grateful for the chance to do both of these things at an event of the scale and significance of the Spring conference.

As for me, my talk (on the role of *Him* and *mef2* on muscle development in *Drosophila* – just to get that in there) went well. Even if I should have perhaps faced the audience a bit more when speaking to them – something I can improve for next time. Afterwards, relieved that it was over, it meant that I could relax and enjoy the rest of the talks that Saturday afternoon and also, more importantly, the ceilidh that night.

With thanks to Raphie Kitson-Pantano and Jo Young for doing such a great job at organising the Student Talks and Student Social this year.

Spring Symposium poster prize winners

First prize:

Jonathan Leslie, CRUK, Lincoln's Inn Fields Labs (wins a trip to meeting of American Society for Developmental Biology).

Runners up:

Kyra Campbell, Department of Zoology, University of Cambridge (subscription to *Science*)

Emily Noel, NIMR, Mill Hill (subscription to *Nature Cell Biology*)

Michelle Pelling, NIMR, Mill Hill (subscription to *Developmental Cell*)


BSDB
AUTUMN MEETING 2007
SHEFFIELD
September 5th-7th
SYSTEMS
APPROACHES
TO
DEVELOPMENT
Richard Adams (UK)
Malcolm Bennet (UK)
Enrico Coen (UK)
Marcos González-Gaitán (CH)
Jim Haseloff (UK)
Paulien Hogeweg (NL)
Dirk Inzé (B)
Johannes Jaeger (UK)
Hans Othmer (USA)
Jordi Garcia Ojalvo (E)
Thomas Schlake (D)
Luis Serrano (E)
James Sharpe (E)
John Tyson (USA)
Lewis Wolpert (UK)
Organisers
Andrew Fleming
Nick Monk
Alfonso Martinez-Arias
Further details (including travel awards) at
http://www.bsdb.org

Stem Cells 2006

Cancun, Mexico
14–17 December 2006

Sarah Robins

Department of Biomedical Sciences, University of Sheffield

This meeting was organised by Fiona Watt (Cancer Research UK) and Abcam, and brought together scientists from all around the world to discuss many varied aspects of stem cell research. We arrived in the normally sunny Mexican seaside resort of Cancun to find pouring rain and flooded streets, but this was more than made up for by our luxurious venue at the Hilton Golf and Spa Resort. To open the conference the keynote speech was given by Rudolf Jaenish (MIT, Cambridge), who gave an interesting overview of the issues facing scientists trying to utilise pluripotent cells for medicinal purposes, focussed in particular on the issues involved with using nuclear transfer to generate patient-specific embryonic stem cells. Many challenges remain in this area, including improving the efficiency of the transfer techniques, understanding the significance of the crucial components such as the 'pluripotency genes' *oct4*, *nanog* and *sox2* and the epigenetic states of pluripotent cells, and tackling ethical issues on the use of human eggs.

"Amy Wagers … demonstrated that skeletal muscle precursor cells could be isolated using a variety of phenotypic markers and transplanted into mice with muscular dystrophy, where they successfully generate both healthy muscle and new precursors."

The next morning the conference started in earnest, with the first session entitled 'Stem Cells and Cancer'. Sean Morrison (Howard Hughes Medical Institute / University of Michigan) was first up, examining the delicate balance between self-renewal promoting proto-oncogenes and tumour suppressors. He focussed on the requirement for the proto-oncogene Bmi-1 in stem cell self-renewal, as evidenced by knockout mice having a depletion of adult stem cells and a reduced capacity for forming neurospheres, and a downsteam tumour repressor named Ink4a. Ink4a knockout mice lose some of the reduction in stem cell numbers seen with normal ageing. Also giving talks in this session were Charles Vinson (National Cancer Institute, Bethesda) on the role of AP-1 in epithelial tumour lineage and Monica Nister (Karolinska Institute, Stockholm) speaking on the effect of PDGF on glioblastoma brain tumours.

Last up before the break was Connie Eaves from the University of British Columbia in Vancouver, looking at regenerative assays to define the properties of stem cells in both the hematopoietic system and mammary gland. After the break the session continued, including a talk by Hans Clevers (Netherlands Institute for Developmental Biology) on the role of Wnt and notch in maintaining intestinal crypts, and some very pretty trichromatic pictures from Irv Weissman (Stanford University School of Medicine) demonstrating the non-clonal origins of hematopoietic cells.

After a long afternoon break to enjoy the beach or the pool, the evening session was entitled 'ESC differentiation and nuclear reprogramming'. It began with Kevin Eggan (Harvard University) examining the optimal way to carry out nuclear transfer, including the advantages of using unfertilized versus fertilized oocytes and improving efficiency by using cells arrested at metaphase. Continuing the theme of working towards patient specific ESCs, George Daley (Harvard Stem Cell Institute) spoke about the possibilities of using ESCs generated by parthenogenesis, the development of an embryo directly from an unfertilized oocyte. After dinner was the well-attended poster session, consisting of two sessions and almost 100 posters. I enjoyed presenting my poster on 'Hypothalamic Stem / Progenitor Cells' and received some useful and encouraging comments from a wide range of people.

The session continued the following morning, starting with a presentation from Ron McKay (Bethesda). He examined the control of fate decisions in differentiating cells by devising an experiment to trace the fate of individual cells within a culture, interestingly demonstrating that lineage could be determined before the cells were induced to differentiate.

The third session was entitled 'Differentiation potential of adult stem cells,' and centred around stem cells from a wide range of adult tissues. It began with Amy Wagers of the Joslin Diabetes Center, Boston, describing her research into hematopoietic and myogenic stem cells. She demonstrated that skeletal muscle precursor cells could be isolated using a variety of phenotypic markers and transplanted into mice with muscular dystrophy, where they successfully generate both healthy muscle and new precursors. Simon Smukler (University of Toronto) talked about pancreas-derived multipotent precursors in mice, which are capable of differentiating into both pancreatic and neural cells. He described the evidence that they were not derivatives of neural crest cells, but were insulin positive suggesting they may represent a relatively undifferentiated population of precursor cells with a wide differentiation potential. He also demonstrated the presence of a similar population of cells in the human pancreas. Also from the University of Toronto, Freda Miller explained her work on skin-derived precursors. As well as functioning as dermal precursors these cells may be derived from the neural crest, and can be induced to produce Schwann cells. This could potentially be used therapeutically to remyelinate axons after spinal injury.

After another free afternoon, and a vigorous volleyball competition amongst the more active delegates, the fourth session focussed on the theme of stem cell evo/devo, microRNAs and retrotransposons. This proved to be a particularly diverse session, with subjects ranging from the formation of the various different structures of feathers (Cheng-Ming Chuong, University of Southern California, Los Angeles) to de-differentiation in lens regeneration of the newt (Nobuyasu Maki, Center for Developmental Biology, Kobe). Afterwards we were treated to a buffet barbeque on the beach, followed by a limbo competition and salsa dancing.

The final morning's talks were based around 'Epigenetics and asymmetry.' Wolf Reik (Babraham Institute, Cambridge) looked at the role of epigenetic reprogramming in pluripotency and development. He described the extensive DNA demethylation that is seen in fertilized zygotes and primordial germ cells, and hypothesized that Aid and Apotec1 may be involved in a demethylation pathway. Brian Hendrich (University of Edinburgh) talked about the role of epigenetic silencing in cell fate decisions, focussing in particular on Nucleosome Remodelling and Histone Deacetylation co-repressor complex (NuRD). He demonstrated that NuRD is required for both the conversion of the inner cell mass to embryonic stem cells and the transition to a lineage commitment, but not for ESC maintenance. Jurgen Knoblich (IMBA, Vienna) looked at asymmetrical stem cell divisions in *Drosophila*, in particular the role of the growth regulator Brat, which is asymmetrically segregated to determine daughter cell proliferation.

We had one final (and as always very tasty) lunch, and then it was time for everyone to disperse to head home, enjoy an extra day or so of sun, sea and sand, or for a very lucky few of us to embark on an extended holiday seeing the sights of the Yucatan peninsular. Overall this was a very entertaining and interesting conference, and I was impressed that there seemed to be something for everyone by covering a wide range of topics within what is a very large and diverse field. It was certainly useful to broaden my knowledge of the topics studied and issues faced by people working in very different areas of stem cell biology to my own, as well as picking up a few ideas for my own research. I am grateful to the BCSB for an Honor Fell Travel Award, and to the BSDB for awarding me a travel grant, both of which enabled me to attend this conference.

"It was certainly useful to broaden my knowledge of the topics studied and issues faced by people working in very different areas of stem cell biology to my own."

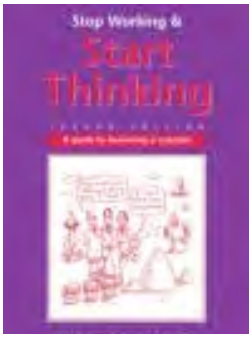
Stop Working & Start Thinking – A guide to becoming a scientist, 2nd edition

Jack Cohen & Graham Medley

Taylor & Francis Group 2005
ISBN 0-4153-6830-8

Giovanna Collu

Wellcome Trust Centre for Cell-Matrix Research, University of Manchester



This is an excellent book, which every budding scientist should read, as should many established researchers. It gives students a solid grounding in what scientific research really is, or what it *ought* to be. In a very accessible and easy style, it covers how to approach scientific research and therefore become a thoughtful and insightful scientist. Furthermore, it is a book that can be consulted time and again for specific information or purely for inspiration.

It is roughly split into three sections: what is postgraduate research; what we should be thinking about in order to properly plan experiments; and finally practical advice for life as a PhD student.

The introduction is very engaging and filled with puzzles to stimulate thinking. The following chapters deal with postgraduate research discussing what we can take from it and how we are changed by it. It makes it apparent that we need to be able to take a step back from work at the bench to realise the answers to these questions. The authors also explore the idea that science is 'the best defence against believing what we want to'. The most important point raised from these chapters is about how we use our intuition to make assumptions. Evolutionarily speaking, making assumptions can be a very useful and time-saving trait; however in the realm of science it can be disastrous, especially when it is done without thought. Several examples are included to highlight how often this happens and how it can shape and distort our hypotheses.

"…if you rely on statistics to persuade someone of your results you haven't designed your experiment clearly enough"

The next section deals with experimental design and what we ought to think about *before* we start working. For example, which design would be best: a deficit experiment, a results reversal or a competition experiment? Clear, practical examples are used to describe the options and illustrate the advantages of one approach over another, thus making these abstract concepts easier to understand. This chapter nurtures the idea that we should all be trying to disprove our hypotheses at every opportunity rather than reaffirming our own assumptions and prejudices. An introduction to statistics is also included covering where and why statistics become important. However, this book is not an in-depth statistics manual rather it allows the identification of the areas in which we need statistical advice. On the other hand, as the authors advise, if you rely on statistics to persuade someone of your results you haven't designed your experiment clearly enough.

The final chapters deal with practical advice for junior researchers. There are guides to producing presentations and posters, and also for writing papers and the final thesis. This section is particularly useful to those considering embarking upon a PhD (or looking for a post-doc) and covers the scientific and social considerations of picking a project and supervisor. It also provides some solace by describing several challenges encountered by the authors' own graduate students, which is reassuring to those who feel that they are currently facing insurmountable problems.

In summary, Jack Cohen and Graham Medley draw heavily from their own experience, which gives their opinions and examples more credence, although if you do not happen to work on cabbage growth or rabbit sperm it can be a challenge to apply these ideas to your own research. However, this book really is an invitation to start thinking; it raises questions without providing all the answers. It challenges the working-all-hours culture and illustrates the need to think and plan ahead to be truly successful. I would strongly recommend that all PhD students stop working, start thinking, and do take the time to read this book. If you don't think that you can find the time then you are precisely the target audience.

"[This book] challenges the working-all-hours culture and illustrates the need to think and plan ahead to be truly successful."

Retinal Development

Edited by Evelyne Sernagor, Stephen Eglen, Bill Harris and Rachel Wong

Cambridge University Press 2006
ISBN 0-52183798-7

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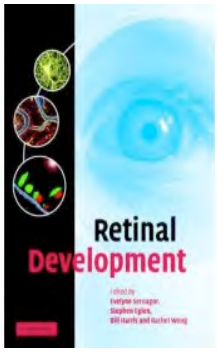

Historically, the eye has been prominent in study numerous biological processes. Until the end of the 19th century, although it was clear that the eye receives some kind of an inverted image projected from the outside world, scientists were uncertain about the precise structure of the retina and its underlying functional mechanisms. This all changed with the first thorough anatomical description of the retinal cell types and connectivity by Cajal in 1893. His observations were, and remain, the basis for the studies we know today. The organization of the retina with its seven cell types and specific microcircuitry might appear relatively simple, but on closer examination its true complexity emerges. This, together with the facts that the eye is an extension of the brain proper and is easily accessible for manipulations and imaging, makes the retina a very appealing structure for studies on neurodevelopment.

This book, edited by Evelyne Sernagor, Stephen Eglen, Bill Harris and Rachel Wong, gives an excellent overview on the different steps of retinal development and the current knowledge in the field, starting from the early specification of the eye-field in the embryo up to the light-evoked responses in the retina after birth. It therefore brings out beautifully the broad spectrum of research and its importance for general developmental neurobiology.

In the first few chapters, the book covers the formation of the eyes, the timing and molecular basis for the generation of the different cell types and how these cells migrate to their final destination in the appropriate layers. Already here two important features of the book emerge: First, it not restricted to only one species or system, but rather tries to incorporate information from multiple sources. This allows making cross-species comparisons and creating a general view of the developmental mechanisms. Secondly, the parallels between developmental processes in the retina and elsewhere in the nervous system, for example during cortical layer formation or the generation of specific cell types in the spinal cord, become clearly evident.

The book then continues to describe the primate fovea and the formation of the optic nerve, before going into more details about retinal glial cells and the description of retinal mosaics. During development it is estimated that more than 50% of the retinal ganglion cells undergo programmed cell death. It is therefore not surprising that one chapter is dedicated to describe this issue entirely, including the underlying mechanisms. The second part of the chapter is a critical view on possible functional roles for programmed cell death in the retina and discusses carefully the available literature.

"Thus, the editors have created a well-written and unique resource with a clear focus."

Next the establishment of the microcircuitry in the retina is examined with a chapter about dendritic growth, followed by two chapters describing the processes of synaptogenesis and neural activity. Here again the book brings out the complexity of the retina, describing the formation of synapses between the different cell types and the activity-based mechanisms at different levels during development. Starting prior to birth, relatively slow spontaneous retinal waves are generated, which appear to play important roles in the wiring of the visual system intraretinally as well as for the connections of the eye to its central targets. After birth, the retina starts to respond to light, first only through melanopsin expressing retinal ganglion cells alone that project to the SCN and only later through the classical photoreceptor dependent mechanisms that are needed to see the outside world.

The book closes with three chapters describing "New Perspectives" in the field, where regeneration and retinal stem cells, the use of genomics, and finally models of retinal development and diseases are discussed. As in the rest of the book, the authors achieve an excellent summary of the present knowledge in these fields. For example the list of all retinal genomics screens carried out so far, including the different techniques and key results should be a valuable resource for others in the field. Evenly, the list and description of the different zebrafish retina mutants is helpful. Their link to human retinal diseases ultimately closes the circle and brings us back to what is written in the beginning of the book: its dedication to the prevention of blindness.

This book follows exactly its title: it gives an overview on retinal development and is therefore different from general textbooks about the visual system. Topics like for example the projection of retinal axons to central targets or how visual information is processed in the brain are deliberately left out. Thus, the editors have created a well-written and unique resource with a clear focus. Overall, Retinal Development is a comprehensive book that features a collection of excellent reviews. But rather than giving only an up-to-date view on the status quo in retinal research, it goes a step further and brings out some of the important open questions still to be answered, to understand the development of the retina as well as the nervous system in general. The book is therefore not only appropriate for specialists in the field of retinal research, but certainly for a wider scientific audience.

Won for All. How the *Drosophila* Genome was Sequenced

Michael Ashburner

Cold Spring Harbor Laboratory Press, New York 2006
ISBN 0-87968-802-0

This short book reminds us of the earliest critical decisions in the field of genome sequencing. It is well worth reading it together with two other books that tell other parts of the larger story of which the fly genome sequence is part. The first is John Sulston and Georgina Ferry's "The Common Thread" and the second is "The Genome War" by James Shreeve, a journalist who was given access to Celera. These three books are significant because the very public conflict between Celera Genomics and the academic sequencing projects to complete a draft sequence of the human genome is having long-term adverse effects on the perception of how academic biology works, especially in the US and more especially in the US government. How did the "Genome War" develop and might it have been prevented or made less damaging?

John Sulston believes that the main factor in not getting the human genome completed sooner as an academic project was the delay in starting the human genome sequence at the maximum rate that would have been possible in 1996. The MRC did not join with the Wellcome Foundation in approving financial support to Sulston for human genome sequencing at that point and the academic community did not wholeheartedly support the effort. While it seems unlikely that the human genome sequence could have been completed with slab gel sequencing technology anyhow, it might have been possible to have had more unanimous academic support for the way the genome sequence was being approached before a commercial competitor appeared. Does the available written history of genome sequencing explain what happened and how did it involve the fly genome?

This little memoir begins snappily with Craig Venter's announcement at a Cold Spring Harbor genome meeting in 1998 that he will lead a company to sequence the human genome and sequence *Drosophila* first to prove the method. The main weapon will be a new generation of much faster automated capillary sequencing machines developed by the Hunkapillers for Perkin Elmer. Gerry Rubin, leader of the Berkeley *Drosophila* Genome Sequencing Project, agrees to cooperate. Michael Ashburner was head of the European Bioinformatics Institute at Hinxton at the time and this book is mostly about the work involved in interpreting the whole genome sequence and the community of people who contributed. Michael helped organize an Annotation Jamboree at Celera where the first round of annotation on the fly sequence was done.

The interactions described here between the fly people and Celera are fraught. The *Drosophila* genome sequence has some commercial value and intense negotiation is required to ensure that it is made available to academic users without restrictions. However, on the day that Celera first make the *Drosophila* genome sequence available to NCBI it comes with constraints that had not been agreed. Michael, a leading advocate of free access to scientific information is the one who cries "Foul!" and recruits others to force Celera to remove the restrictions. Michael refers to Shreeve's book for proof that the company lawyers had indeed been testing the water with this ploy. It was important therefore that Michael ensured the rebuff.

The title "Won for all." refers to the spirit of challenged brotherhood that developed between the main academic genome sequencing centers in response to Celera. Michael is toeing the standard academic line here but his attitude to the public genome sequencing projects is of equal interest and this is more ambivalent than his book title suggests. What we tend to forget about The Three Musketeers is that d'Artagnon was not in fact one of them but a brasher person with the same objectives. The person who emerges as d'Artagnon here and in the Shreeve book is not so much Craig Venter as Gene Myers, the computer scientist who led the assembly of the genomes for Celera. He was helped by an emeritus Hamilton Smith who made the clone libraries.

Liam Keegan

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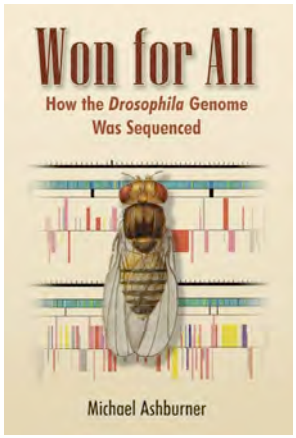

""What we tend to forget about The Three Musketeers is that d'Artagnon was not in fact one of them but a brasher person with the same objectives."

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Myers had several years earlier co-authored a suggestion that the human genome could be assembled without first building a complete physical map of overlapping clones.

""There is no reason to switch."

Instead, carefully sized random genome fragments sequenced at opposite ends to generate "mate pair" sequences at a known distance apart would provide enough positional information to order the full genome sequence assembly. Michael quotes Phil Green, a close colleague of Bob Waterston and John Sulston who were the main genome sequencers at that time, in his authoritative and not entirely gentle rejection of this suggestion for a change of approach; "There is no reason to switch". The fly genome assembly showed that Myers had been substantially correct; this would be the main way to sequence genomes in the future. The Celera genome assembly was validated by comparison to the 20% of the fly genome that had already been sequenced mainly by Rubin's project at Berkeley. Remaining gaps were closed and the genome finished at Berkeley. Myers is now back in academia, in Gerry Rubin's new research campus at Janelia Farm.

""What happened instead was that, by 1996, the really exciting sequences had been produced by individual labs working on fly and mouse and human."

While much of the argument of "Won for all." is directed against commercial motivations and in favour of open scientific information, criticising Celera seems a little like flogging a dead horse at this point in time. This book would be better if Michael had told the full story of the slow steps to the sequencing of the fly genome and its wider relevance from his own perspective even if others might disagree with it. Instead he avoids discussing the bigger issue of the human genome sequence and we have to take hints from his somewhat cryptic pointing out of inflexibility in the public sequencing projects. Why is Michael still criticising only Celera? Would a more even-handed presentation have forced him to embarrass his friends by discussing other instances where the academic sequencers got it wrong?

A more complete version of this book would begin in 1989 when the clone map of the worm genome was completed. Jim Watson suggested at this point that the fly genome rather than the worm genome should be sequenced. Watson tried to get support for this view within the British MRC and, as interviews carried out by Georgina Ferry show, Aaron Klug, then head of the LMB, was sufficiently convinced to attempt to argue the matter with John Sulston. Watson understood that genome sequencing could not capture the imagination and the support of biologists and go ahead at the maximum pace unless the fly genome rather than the worm genome was done first. It was already clear in 1989 that the fly sequence had much greater similarity to human sequence than the worm sequence did. Also the greater similarity between fly and vertebrate in the control of organ formation and in *Hox* gene conservation and function, for example, would make the fly a much more useful choice than worm to advance the argument for comparative genomics and thereby human genome sequencing. What happened instead was that, by 1996, the really exciting sequences had been produced by individual labs working on fly and mouse and human. The worm genome sequence, the only product of large-scale animal genome sequencing was pretty dull and we were not excited about spending vast sums on the human genome.

Homologues of many important human genes found in the fly had not been detected in the worm, because the greater sequence divergence made it impossible to see conservations that were not strongly expected. On the other hand the really spectacular examples of sequence and functional conservation between fly and human genes were the ones that could have altered the fortunes of genome sequencing if the fly had been sequenced first. In 1995 Walter Gehring's laboratory in Basel showed that the fly *Eyeless* gene or its human homolog *PAX6* would produce ectopic eyes on legs and other parts of the body in flies. The fly ectopic eyes provided compelling evidence to human and vertebrate geneticists of the potential of comparative genomics. If the *PAX6* homolog and other fly gene homologues had been identified in a fly genome sequence being done in the Cambridge at that time then genome sequencing would have shared in the credit for this and many other discoveries. Celera rubbed salt in the Sanger Centre's wounds by correcting the mistake, sequencing *Drosophila* as a public service. The fly genome sequence made it clear, above all, just how much better the reputation of genome sequencing could have been at the crucial moment in 1996 if the fly had been sequenced first.

Michael in this book recognizes the similarities between the human genome sequence and the Apollo project. If the Sanger Centre had sequenced *Drosophila* in the early nineties the effect of all those exciting and dramatic conserved gene homologues arriving together would have been electric. Jim Watson now likes to ask, “What has happened to British science?” The Sanger Centre was the leading sequencing center at the time and they lost a great opportunity. Reading “The Common Thread” suggests that part of the problem may be the narrowness of traditional British PhD training that leaves people at later stages in their careers struggling to make balanced decisions over a wider range of biology.

It is worth reconsidering the worm-fly genome sequence debate, brief though it was, because the genome sequencing Apollo project is not yet finished. We now probably have to make billion dollar investments in projects to advance genome sequencing to the point where it will be affordable for each of us to have our genome sequenced as a routine part of clinical practice. Once again we must choose the most worthwhile biological target for a huge project and like the worm-fly choice the decision will affect the progress of academic biology. One of the most disturbing aspects of the history of the worm-fly genome decision is John Sulston’s claim that they went ahead with worm partly because the clones were already available. It was the challenge of scaling up, of developing the large scale sequencing methodologies on easily available DNA that excited them more than the choice of biological target.

“Jim Watson now likes to ask, ‘What has happened to British science?’ ”

Reviewing a book for the BSDB

Suggestions for future book reviews are always welcome. If you know a book you think should be reviewed, please contact the Editor. Reviewers receive a free copy of the book for their trouble.

Here are some possibilities:

From CUP

Principles and Techniques of Biochemistry and Molecular Biology, 6th edition (Hardback)
Edited by Keith Wilson, John Walker
New, fully updated edition of bestselling textbook, expanded to include techniques from across the biosciences.
http://www.cambridge.org/0521828899

Key Experiments in Practical Developmental Biology (Hardback)
Edited by Manuel Marì-Beffa, Jennifer Knight
This manual presents 27 laboratory exercises for student practical classes in developmental biology.
http://www.cambridge.org/0521833159

RNA Interference Technology: From Basic Science to Drug Development (Hardback)
Edited by Krishnarao Appasani
Cutting-edge overview of RNA interference (RNAi) technology, covering both fundamental science and applications.
http://www.cambridge.org/0521836778

From Humana Press

MicroRNA Protocols
Ying
1-588-29-581-8

Epidermal Growth Factor
Patel & Bertics,
1-588-29421-8

DNA Repair Protocols. Mammalian Systems. 2nd ed.
Daryl S. Henderson (ed)
1-58829-513-3/973-7

Differential Display Methods and Protocols 2nd ed.
Peng Liang, Jonathan Meade and Arthur Pardee (eds)
1-58829-338-6

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Fly Pushing. The Theory and Practice of Drosophila Genetics, Second Edition
Ralph Greenspan
087969 7113

The Condensed Protocols *From Molecular Cloning: A Laboratory Manual*
This manual is a single-volume adaptation of the three-volume third edition of *Molecular Cloning: A Laboratory Manual.*

Won for All: How the *Drosophila* Genome Was Sequenced
Michael Ashburner

The Strongest Boy in the World: How Genetic Information is Reshaping Our Lives
Philip R. Reilly

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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The Back Page

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www.bsdb.org

Further riddles from Hypogaeus

1. Cell ready to go: softly within heavenly body, mixing ten (9)

2. Nervous crockery? (6,5)

3. Organism takes shape after chaotic miles (5,5)

4. Initially played, the (French) cipher makes sense (7)

5. Insect (female) is very attached to flower (6)

6. Public broadcasting service is initially used to float tissues (3)

7. One hundred over a small error flattens the specimen (5,4)

Answers to previous riddles:

Left-right asymmetry; invertebrate, tunicate, *Xenopus*, siRNA, blastula, wolverine, *knotted*, fibroblast, evo-devo

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http://www.biologists.com/web/index.html