BSDB Newsletter

Summer 2012
Vol 33, No 1

British Society for Developmental Biology
www.bsdb.org

BSDB Autumn Meeting
The Molecular and Cellular Basis of Regeneration and Tissue Repair
2-6 September 2012
University of Oxford

Waddington Medal 2012 winner
Alfonso Martinez-Arias

THE COMPANY OF Biologists
www.biologists.com

BSDB Newsletter. Vol. 33, No 1 Summer

Editorial

In this issue, I have made a few changes to the template of the BSDB Newsletter. We want the Newsletter to be a printer-friendly, easy and concise read, as well serving as a useful resource for information on how the society is being run and what we are providing for the membership. Your feedback is welcomed.

Malcolm Logan
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The BSDB has a Facebook presence. Become a friend for the latest information on upcoming meetings and events

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cover picture courtesy of Morgane Poulain and Elke Ober. Ventral view of the zebrafish foregut-derived organs at 2 days of development: The liver and pancreas (red) form in close proximity to each other and are connected via a ductal system (blue) to the gut (green)

From the chair

Liz Robertson
BSDB Chair

This year the Spring 2012 meeting was held jointly with the Japanese Society for Developmental Biology and we were delighted to welcome some 50 JSDB colleagues to Warwick. The meeting was organized by Kim Dale and Malcolm Logan from the BSDB, our BSCB colleagues Tomoyuki Tanaka and Helfrid Hochegger together with Naoto Ueno and Atsuko Sehara-Fujisawa from the JSDB. As is usual good science is never in short supply at the Spring meeting. The first evening we were entertained by Denis Duboule (EMBO lecture) describing how the "hox clock" ticks, and his model whereby genes are temporally released from the tightly compacted chromatin clusters by a mechanism he compared to his Grandmother counting beads on her rosary. The Garland Lecturer Richard McIntosh (Boulder) explained his life –long interests in the cytoskeleton and how microtubule tips act as mechanochemical sensors.

On Monday evening I chaired a very well attended AGM, with over 100 members taking part. Andy Fleming was unable to attend but had turned in a very healthy set of numbers summarizing the current BSDB finances. We continue to be extremely grateful to the Company of Biologists for their generous support of the Society. As we are all painfully aware grant funds are in exceedingly short supply these days and I would encourage all of our membership, regardless of seniority, to apply for travel grants to go to meetings. We had an extremely strong slate of nominations for the three vacancies on the BSDB meeting, and after the votes were in and tallied up by myself, Mike Taylor and Chris Thompson, I'm pleased to report that Jo Begbie (Oxford), Anna Philpott (Cambridge) and Henry Roehl (Sheffield) will be joining the committee. Our thanks to Josh Brickman, Juan Pablo Couso, and Andrea Munsterberg who are stepping down at the end of their term of office.

'the real crowd puller was discussion of the motion...that the name of the society be changed to incorporate "Stem Cells".'

The second major item for discussion, and the real crowd puller, was discussion of the motion, proposed by Kim Dale and seconded by Fiona Wardle, that the name of the Society be changed to incorporate "Stem Cells". The decision to table this motion was based on membership feedback to an email circulated by the BSDB committee earlier in the year. The general consensus was this was an opportune time to discuss how our Society is positioned within the UK with respect to stem cell research, which many recognize to be a key area of developmental biology in the 21st century. Indeed when I asked for a general sense of how many members felt their research incorporated aspects of stem cell biology all but a few hands went up. After an extensive and lively discussion, in which a large representation of both senior and junior members participated and all sides of the argument were fully articulated, the motion was put to the vote. The constitution requires a two thirds majority to implement a change, and subsequent counting of the ballots showed the motion was defeated by the slimmest of margins with 60% in favour and 40% opposed. Given that the majority of votes were in favour, I think we should all spend the next few months further reflecting and if there's sufficient ground-swell from the membership we can possibly continue the debate at the next AGM (giving me ample time to read-up on Robert's Rules!). Please feel free to contact any of us on the committee with your thoughts. Again, the AGM is the single forum when we can discuss and debate important changes to our Society, so I would encourage everyone to make the use of this opportunity if they feel it's time to amend any aspect of how the Society is organized and run.

The following day was again extremely busy. At the end of the afternoon the Beddington Medal was awarded to Boyan Bonev for his thesis research in Nancy Papalopolou's lab who gave a very well articulated talk about his experiments exploring the role of the micro-RNA-9 in temporal and spatial control of neuronal progenitors in fish. Bonev was followed by the Waddington Medal lecture - this years mystery winner was revealed as Alfonso Martinez-Arias. Not to be out-done by previous Waddington recipients, Alfonso's lecture included lots of audio-visual segments, including newsreel footage of the riots and student unrest in Madrid under Franco's regime, when Alfonso was a struggling university undergraduate, and concluding by a montage of images and video clips of developing embryos set to music. The bar just got set higher for next year's winner! I'm sure Alfonso would be delighted to distribute copies of his wonderful little movie – a great teaching tool. The Medal sessions did run over a little, compressing the Graduate Student symposium. However everyone kept to time and the quality of the talks was outstanding, but we do plan to re-jig the schedule for next years meeting, to allow the Symposium a little more breathing space.

Hopefully many of you have been able to get to some summer meetings. The BSDB student poster winner Stephen Flennor (Jo Begbie's lab) was dispatched off to this years SDB meeting in Montreal, and promises us a full report for the Winter Newsletter. The highlight for me was being invited to speak at the Young Embryologist Network (YEN) symposium hosted by the Institute for Child Health. There was a large turn out from across the London developmental biology labs, with were great talks, great posters and a very interactive atmosphere. And the meeting was organized entirely by a group of local post-docs and students. I hope the success of London YEN catalyzes other groups from around the country to start similar networks. The BSDB committee is here to help any new post-doc and student led initiatives.

Liz Roberstson

'The BSDB committee is here to help any new post-doc and student led initiatives.'

Treasurer's Report

The accounts for the last financial year (2010-11) have been approved and I'm happy to say that the BSDB is in a good financial position. Our membership remains buoyant and the Company of Biologists has continued to support us very generously. In numbers, this means that our total income for the last financial year was £76,033, of which the vast majority was derived from membership fees (£32055) and the CoB (£33,500), with the remainder coming from surplus on our Autumn and Spring meetings (total £5,299) and investment income (£3,681). Our total outgoings were £71,652, of which the vast majority was spent either on grants to individuals (£44,292) or direct support for BSDB meetings (£19,729), the remaining costs (£7,631) including prizes for BSDB events, administration and committee travel costs and accountant's costs. As a result, the BSDB made a surplus over the last financial year of £4,381, in line with our aim of achieving a balanced budget over the financial year. This annual surplus is in the context of fixed investments (which provide the financial foundation of the Society) which were valued at £229,555 (reflecting a strong investment performance over 2010-2011).

For the financial year just passed (2011-12) the provisional balance sheet also looks good. Details will be provided in the autumn, but the highlight numbers are that we have provided to date 89 BSDB grants at a total of £37,624 and have administered 78 CoB/BSDB grants at a total value of £31,970. The Spring meeting in Warwick was both scientifically and financially successful and we are looking at a small surplus which will be split between the two organising societies (BSDB and BSCB). This surplus is primarily due to the continued success of the organisers in attracting sponsorship from companies, which is a great achievement in the present economic situation- so many thanks to them and our loyal sponsors.

In conclusion, the BSDB remains financially in a sound position.

Andrew Fleming

Treasurer

July 31st 2012

Please Note.

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

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.

Waddington Medal Winner Alfonso Martinez-Arias

The Waddington Medal lecture is always one of the highlights of the BSDB spring meeting. The medal is given for "outstanding research performance as well as services to the developmental biology community", and this year it was my great pleasure to present it to Alfonso Martinez-Arias from the University of Cambridge. Alfonso has been at the forefront of Drosophila developmental biology since the early 1980s and has made many noteworthy contributions. Early on he discovered so-termed 'para-segments' and showed that they, not segments, are the domains of homeotic gene function. Together with Phil Ingham and Mike Akam he was instrumental in developing the all important in-situ hybridisation protocol for Drosophila embryos, and exploited this technique extensively publishing a series of landmark papers on segment polarity and homeotic genes. Alfonso moved on to studying imaginal discs, in particular delving into the molecular and biochemical basis of inter-cellular signaling. He's well known for both work on the wingless pathway as well as non-canonical Notch signaling. More recently, he's been working at the interface with experimental systems biology. His current adventures into signalling, biological noise, stem cells and morphogenesis are truly interdisciplinary, involving collaborations with physicists, mathematicians and engineers.

'..with Phil Ingham and Mike Akam he was instrumental in.. publishing a series of landmark papers on segment polarity and homeotic genes.'

Every year we solicit nominations from our entire membership and the winner is decided by a vote of the BSDB committee. From the time the outcome of the vote is known to the committee until the moment I stand up to give the Introduction everyone's lips are sealed. Of course I have to do my homework and unearth interesting and little known facts about the winner, and every year try and keep the audience guessing just a few minutes longer by showing the recipient at an earlier point in their career or in an unusual setting. This year I was aided and abetted by Alfonso's wife Susan who kindly raided the family photo albums. The first gem up on screen was a photo of Alfonso as a toddler, wearing this lovely little gender neutral smock and already visibly bouncing with the energy that still characterizes him to this day. His father was a prominent news journalist and editor, and both his parents worked for Radio Nacional de Espana - the BBC equivalent in Spain. Alfonso was the oldest of four boys and grew up in a family steeped in literature and learning. But growing up under Franco placed constraints on intellectual as well as political freedom, and Alfonso´s father encouraged him to leave Spain. Indeed in his Medal lecture Alfonso showed us newsreel footage from the time he was trying to study at the University of Madrid, with armed soldiers and running street battles. After completing his Biology degree at the University of Madrid, he won a Fulbright scholarship that took him to Chicago for his PhD studies, where he worked on yeast with Malcolm Casadaban graduating in 1983. While he enjoyed working on yeast, he became aware of papers emerging from the Gehring lab on Drosophila and he realised that this was the field he wanted to pursue. He secured an EMBO postdoc fellowship to join Peter Lawrence's lab at the LMB in Cambridge. The mid-80's were the heady days of the unravelling of the molecular basis of segmentation, and Alfonso was truly in the thick of things working alongside Peter, Mike Bate, Mike Akam and Mike Ashburner.

In 1987 he was awarded a prestigious Wellcome Trust Senior Fellowship and relocated to the bowels of the Zoology Department facing onto Downing Street. By all accounts these were exciting times, a veritable epicentre of Drosophila genetics with the basement housing the groups of Helen Skaer, Mike Bate, Mike Taylor and Alfonso. Inspite of the physical surroundings - many of the labs were windowless, or had windows that allowed only glimpses of passing feet or car tyres, it proved to be an intellectually invigorating environment. The space was shared with the frighteningly large caesium irradiator, and freezers full of dead seagulls. In 2000 Alfonso emerged above ground to the Department of Genetics on Tennis Court Road, where he has remained ever since, first as a University Lecturer, from 2003 onwards as Professor of Developmental Mechanics.

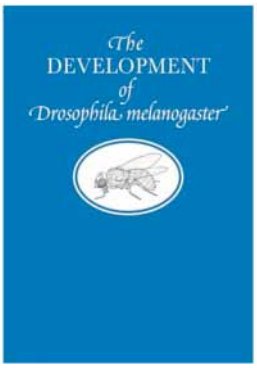
Alfonso may have lived in the UK for the past 30 years he hasn't lost any of his Spanish passion. His colleagues have noted that one of his more endearing characteristics is his intensity, frequently accompanied by energetic arm gesticulations. To quote: "The man literally bubbles with ideas and cannot contain himself when excited. A conversation with him never fails to leave the interlocutor simultaneously uplifted, challenged, and armed with practical suggestions for his/her research". Everyone I talked to told me that

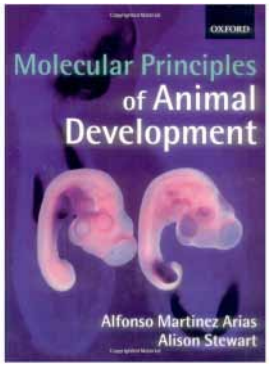
Waddington Medal winner 2012

he's a truly inspiring supervisor, and acts an informal and highly valued mentor for very many past and present Developmental biologists in Cambridge.
While science has always been Alfonso's main passion, he has many other interests. He's often described as a true Renaissance man – he speaks multiple languages and is equally at home discussing history, art, literature, music, or politics. He likes certain types of cinema, mainly obscure, cult-like, intense psychological thrillers with dark overtones. He reads avidly, mostly fiction, from the classics to modern, novels full of poignancy and drama. He also likes to read about fallen greats such as Scott of the Antarctic and Gorbachev.

Finally, no overview of Alfonso would be complete without mention of his life long passion for football. As a young lad he played goal keeper, which in Spain meant having to constantly dive onto the hard, dirt pitches of his neighborhood. Obviously good preparation for a life in science - being willing to throw yourself on the ground and keep getting up again albeit battered and bruised. In his earlier days at Cambridge he was part of the infamous Zoology Zebras football team, although sadly no pictures of them in their cool black and white strip appear to have survived. He's been a life long supporter of Athletico Bilbao, which he owes to his father´s Basque roots. He follows their games avidly, originally tuning in to short wave radio broadcasts, and now via the Internet. However on occasion he may be close to taking his football passion one step too far - Susan told me she was forced to spend a good part of their 25th anniversary trip to Boston, not visiting museums and enjoying in the sights, but rather finding Irish pubs screening the Spanish games during the Euro2008 championship. I suspect he might have spent a considerable amount of time tense but glued to the screen during Spains progress to the final where they emerged as the winner of this year's Euro 2012 competition.

Alfonso has made numerous contributions to UK science in general. He's served on the BSDB committee, organized many conferences and taught numerous Summer Schools. However he's probably best known for his two books, the first of which, the so-termed 'Blue Book' "The development of Drosophila melanogaster' he edited with Michael Bate, copies of which may be found on the shelf in every fly lab across the world, and the influential undergraduate text book 'Molecular Principles of Animal Development' which he wrote with Allison Stewart.





His life long passion for development was revealed in full during his lecture which concluded with a beautifully crafted short film, showcasing the development of a plethora of invertebrate and vertebrate embryos, which was met with a well deserved and extended round of applause.

Liz Robertson
BSDB Chair

'he's a truly inspiring supervisor and acts as informal and highly valued mentor for very many past and present Developmental biologists..'

EMBO Conference

The Molecular & Cellular Basis of Regeneration & Tissue Repair

BSDB

Co-sponsored by the British Society for Developmental Biology as their Autumn Meeting 2012

2–6 September 2012 | University of Oxford, UK

REGISTRATION

Deadline: 30 April 2012

Standard fee..... 595 GBP
Twin room fee ..... 530 GBP
Day delegate fee ..... 340 GBP

Includes:
- 4 nights accommodation
- All meals & coffee breaks

BSDB DISCOUNT

BSDB members will be given a £50 discount on the registration fee

FELLOWSHIPS

EMBO fellowships and BSDB travel grants available for PhD Students and Postdocs

SPEAKERS

Aziz Aboobaker
University of Nottingham, UK

Enrique Amaya
University of Manchester, UK

Michael Brand
Center for Regenerative Therapies, TU Dresden, DE

Susan Bryant
University of California, Irvine, US

Jeffrey Davidson
Vanderbilt University School of Medicine, US

Marcela Del Rio
Universidad Carlos III de Madrid, ES

Karen Echeverri
University of Minnesota, US

Sabine Eming
University of Cologne, DE

Patrizia Ferretti
University College London, UK

Michael Galko
University of Texas MD Anderson Cancer Center, US

Brigitte Galliot
University of Geneva, CH

Matthew Hardman
University of Manchester, UK

Antonio Jacinto
Institute of Molecular Medicine, PT

Kimberly Mace
University of Manchester, UK

Paul Martin
University of Bristol, UK

Enrique Martin-Blanco
Molecular Biology Institute of Barcelona, ES

Liliane Michalik
University of Lausanne, CH

Tom Millard
University of Manchester, UK

Ken Muneoka
Tulane University, US

Paul Riley
University of Oxford, UK

Nadia Rosenthal
EMBL Monterotondo, IT

Emili Salo
University of Barcelona, ES

Sabine Werner
ETH Zurich, CH

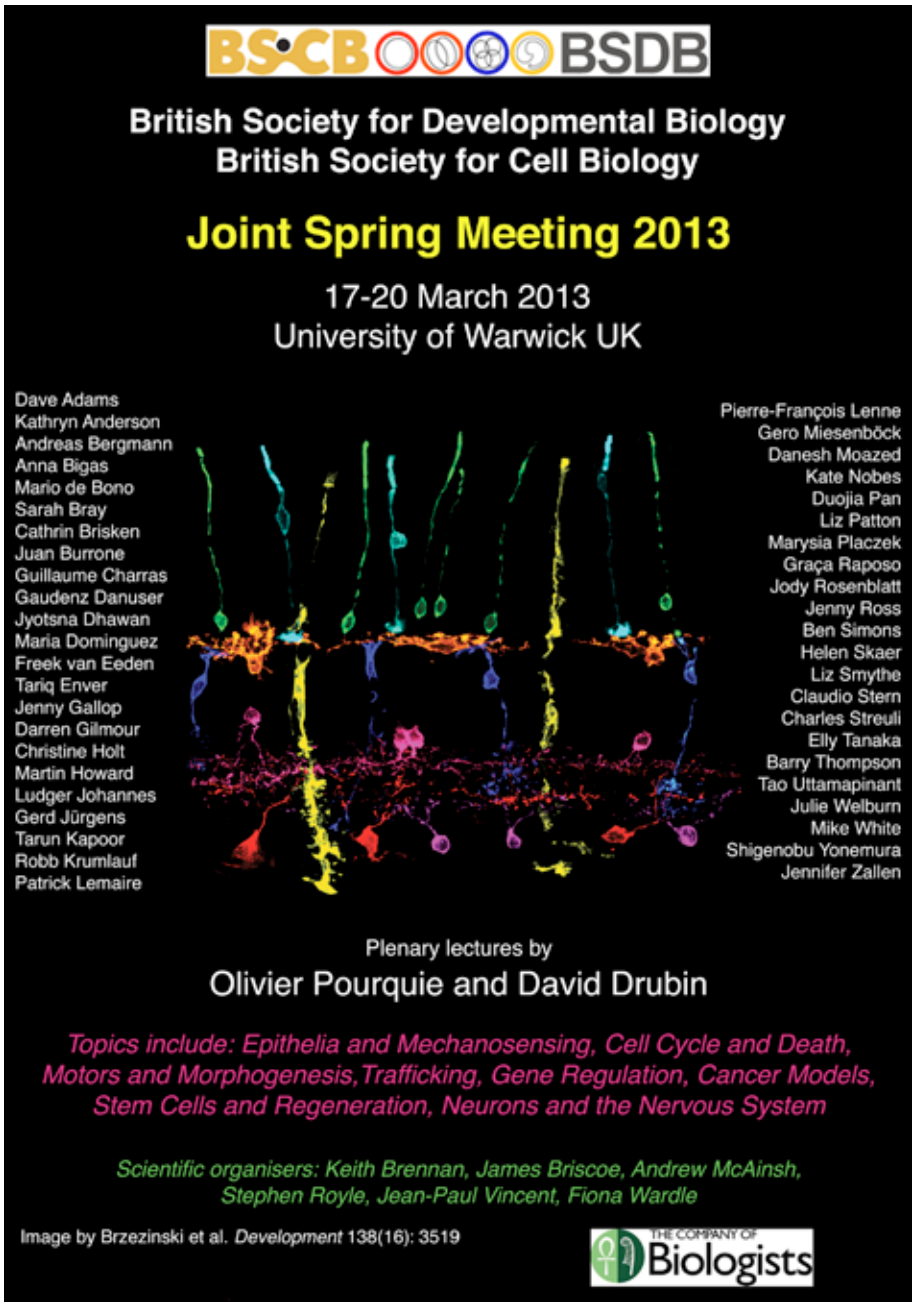
Will Wood
University of Bath, UK

Max Yun
University College London, UK

http://events.embo.org/12-regeneration

EMBO excellence in life sciences

Upcoming meetings



BSDB Autumn meeting 2013

Axon Guidance and Regeneration
28th-30th August 2013
University of Aberdeen
www.abdn.ac.uk/bsdb2013

Organisers:
Lynda Erskine
Robert Hindges
Masaru Nakamoto
Derryck Shewan

Plenary lectures from Carol Mason and Christine Holt

Confirmed speakers include:
Catherina Becker, PaolaBovolenta, Frank Bradtke, Alain Chedotal, Charles Ffrench-Constsant, Eloisa Herrera, Philip Gordon-Weeks, Artur Kania, Roger Keynes, Iris Salecker

Travel grants (Company of Biologists Travel Awards)

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. Generally 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.

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. Preference is given to members presenting work at the meetings.

Practical courses

The BSDB 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.

I process the applications as rapidly as I can but it can be 6–8 weeks after you submit an application before you are notified of your award. Please note that I do not make funds available to attend meetings that have already taken place when I come to consider the applications. Please bear this in mind and submit your application at least two months before the start date of the meeting.

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. Also, due to our charitable status, the purpose of any award must be clearly identifiable as Developmental Biology.

Please Note.

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

Subscription information

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

Graduate Student Column

I believe many of you, fellow students, will agree that having the chance to be in the UK in this Olympic Summer is definitely a remarkable moment. As the torch passes by, several friends are writing-up, and soon a new group of students will start their research projects as September normally marks this transition phase in many institutes and universities. Having this in mind, I thought about two topics that can help students engage with the Developmental Biology community.

First, this is a great time to tell your new students or colleagues joining the lab about the BSDB – as we all know (but they might not), the Society organizes meetings of interest for those working in Developmental Biology, Stem Cells and many other topics, where one will have a chance to interact with a vibrant community who share common interests. Moreover, members can apply for travel grants to attend meetings which might otherwise not be possible – just check the details on the website, and take this opportunity to let your new lab members know about it and benefit from the advantages of being a BSDB member.

Finally, I also take this chance to encourage dynamic students throughout the UK to organize activities or events to promote discussions among their local communities. While I have been involved with a group of students and post-docs in the London area, I can say from experience that it provides a powerful link between its members that sometimes generates unexpected collaborations, sharing of reagents, exchange of technical skills or combination of model organisms to address common questions. Many of you have probably come across the Young Embryologist Network (http://www.youngembryologist.org), that started in 2008 and is a cross-institutional network of students, post-docs and PIs interested in Developmental Biology. In addition to promoting seminars throughout the year in the London area, the YEN has its annual meeting that has had an increasing audience. The last two annual Meetings have had participants coming from the UK and abroad and a great selection of talks that are largely given by students and post-docs.

Having been involved in several activities promoted by the YEN, I think it has served its main aim very well, that of connecting people with common research interests. As I also came across a local interest group in Scotland, I invited one of the members to contribute with some information about the 'Scottish Developmental Biology Group'. Robert Bone, a final year PhD student in Kim Dale's lab at the University of Dundee, writes: "we have a strong interest in communicating our understanding of developmental biology to the public. As well as presenting our data to the community through various college events, we have a strong relationship with the Glasgow Science Centre and have been a part of public science events in the past. Our group are currently involved in designing an exhibit for the 'BodyWorks' exhibition at the Centre, due to open in March 2013, with the aim to convey the similarity of early development between species." The SDBG also promotes interaction among members and you can find out more about the group on their own Facebook page. https://www.facebook.com/pages/Scottish-Developmental-Biology-Group/142187949184841

I think these local communities can synergize very well with the BSDB, and would encourage you to join them or think about the potential of your student group to become more dynamic. Please do let us know if you are aware of similar groups, or of any other content you'd like to know about or write in this section.

Enjoy the experiments!

Jorge V. Beira
jbeira@nimr.mrc.ac.uk

Visit the BSDB graduate student group at Facebook.com to get connected with other members and keep up to date about student events.

Post-Doc Column

Stephen Freeman
Riken CDB
Kobe
Japan

Since moving to Japan I've been taking a weekly Japanese language course. Getting re-accustomed to learning a language has been great fun. The lessons have also come with an added bonus, because each week, before we get to the grammatical nitty-gritty, my teacher spends some time teaching us about various aspects of Japanese culture. Last week she introduced some of the ideas that underpin Shinto and Buddhism, the two most popular religions in Japan. I was fascinated, in particular, when she explained the belief that words have a soul. The notion is that because words have a soul, you must choose yours carefully, and always try to give them a good soul. If you say bad words, you have, in essence, released a gang of bad souls into the world, and these ne'er do wells have the potential to scurry off and cause harm.

What does this have to do with science? Well, maybe more than you might think. This lesson in soulful words came in the same week I received the referees' comments from a paper I recently submitted. Now, you might be thinking after reading the opening paragraph that I'm going to moan about how unfair the comments were. I'm not. Indeed, I can't because the comments were perfectly valid. But what I am going to do is explore how they came to be and my response to them. Because despite the comments being right, I still felt really angry and rejected when I was reading them. The red mist descended and I felt irrationally protective over the data in my paper.

Once the red mist had passed, I was surprised at just how irrational my response had been. Science is a game in which criticism is inevitable – indeed a necessity. So over the years, I have received plenty of it, and you would think that this sort of prolonged exposure would cause me to habituate to the feelings of rejection and anger that come along with it. But that didn't seem to be the case. However, the more I thought about it, the more I realised that it wasn't the comments I was angry with at all, I was angry with myself.

At this junction, I should point out that the comments were mostly concerned with the interpretation of my data, and they rightly pointed out that I had begun to infer too much from the data I had presented. I was angry with myself because I had taken my eye off the ball – I had not been critical enough of the conclusions I had reached from my data. The whole experience made me realise that although it is important to care about your research – to approach it with rigour and attention – you should not become too attached to it. If you do, you run the risk of amplifying its importance in your own mind beyond its proper position in reality. It is, of course, impossible not to feel some degree of attachment to your work. The long hours spent designing the experiments, performing the experiments, troubleshooting when the experiments go wrong, it all adds up so that even the tiniest result seems to have gigantic significance. It is easy to look at it through rose tinted glasses. But however great you might suspect your data is, you have to remain objective.

The desire to publish in high impact journals further muddies the water. It is something I have become more and more aware of, and is a topic that constantly crops up when I talk with my peers. What journal are you going for? This is almost always the first question we ask when one of us is getting ready to publish. But is it the right question to ask? Should we be so obsessed with where we send our data? Well, on one hand, of course we should. Selecting an appropriate journal, whose publishing history fits nicely with the appeal and subject matter of your work, is a diligent and important part of writing a paper. The problem comes when journal selection promotes a culture of trying to put the best possible spin on data. Spin and fact are often uncomfortable bedfellows, and science is always at its best when it deals with evidence, not hyperbole.

So I've developed a new respect for words. And it is something I urge you to do when you write a paper. Don't slip out of the habit of being ultra critical of your own work. As scientists we all have a responsibility to be accurate. Know your data, be proud of what it tells you, but don't fall in love with it.

BSCB/BSDB/JSDB Joint Spring Meeting 15-18th April 2012 University of Warwick

The BSDB held their 2012 spring meeting jointly with the British Society for Cell Biology (BSCB) and the Japanese Society for Developmental Biology (JSDB). Members of all three organisations travelled to the University of Warwick to learn about and discuss new developments in the field.

The meeting began on the 15th April with the EMBO lecture from Denis Duboule. Denis discussed the vertebrate *Hox* clock, suggesting why *Hox* genes are regulated in *cis* while many other 'clocks' are regulated in *trans*. He also presented a model for *Hox* gene activation in which the cluster is thought of as a rosary, with genes (or beads) being moved from a closed conformation to an open one (like being passed hand to hand). Richard McIntosh then presented the BSCB Garland Plenary Lecture, addressing the role of microtubule tips as mechano-chemical devices within the cell. It was intriguing that the microtubule tip is now considered a molecular engine not only during polymerisation, as has always been classically recognised, but also during depolymerisation, in which coupler proteins can meaningfully transduce forces generated by bending protofilaments.

The opening day was concluded with a social (but hotly contested!) student and post-doc pub quiz, organised by the BSDB and BSCB student committee representatives Jorge Beira and Kimberley Bryon-Dodd. The quiz was great fun and gave everyone a chance to break the ice over a few social drinks.

The first full seminar session of the conference began with a lively and thoroughly interesting talk delivered by Duncan Odom on the evolution of mammalian gene regulation. Dr Odom stipulated that canonical transcription factor binding sites are mobile and may not be as evolutionarily conserved as previously thought. The session focused on Next Generation Sequencing (NGS) and was chaired by Jim Smith, covering a range of topics from the use of GFP-expressing marmosets as non-human primate genetic models to general principles of *cis* regulatory control in development. Collectively the talks exemplified the wealth of opportunities that NGS is offering the field of developmental biology.

A unique opportunity was granted to PhD students and post-docs alike in Monday's lunchtime workshop, which saw established PIs at a range of stages in their careers giving a rare insight into how they had reached their current position, coupled with snippets of advice and pearls of wisdom for early-career scientists. Chaired by Kim Dale, grateful attendees took full advantage to ask questions regarding when and where to take post-doc and faculty positions and the timeless 'how do I know I'm cut out for research'. The panel also answered concerns of raising a family whilst pursuing a full time research career and how to go about negotiating ownership of projects when establishing your own lab.

The afternoon session of talks covered the topic of imaging space and time in development. Elliot Meyerowitz presented an engaging talk on understanding how plant cells communicate in the shoot apical meristem. Using live imaging, genetic alterations and computational modelling, he demonstrated that a combination of stress patterns and hormone transport are able to influence cell polarity and thus influence plant growth. Toshiki Fujimori then spoke about oocyte transport along the mouse oviduct. Ciliary beating maintains the unidirectional flow of the oocyte, and its appears that the PCP regulator Celsr1 plays a crucial role in the organisation of these cilia in order to coordinate the flow of the oocyte. Besides these, other speakers also showed how imaging has been used to study wound healing, organ development, and trunk segmentation, allowing the audience to marvel at how microscopy and photography can capture developmental processes in all their glory.

The day's talks ended with the Hooke Medal Talk by Holger Gerhardt. This was an excellent showcase of how developmental and cell biology has come together. Vascular patterning and branching have traditionally been described in a "tip and stalk cell" fashion, with cells at a leading edge assuming the role of tip cells in order to permit branching of the vascular tissue. We learned that this dogmatic idea is starting to be dismantled, with in vivo imaging showing that tip and stalk cells shuffle around regularly, leading to the novel concept that vascular sprouting should perhaps be thought of as collective

instead of individual cell behaviour.

A poster session and drinks reception took place in the evening, allowing attendees to mingle and discuss one another's work in an informal and friendly setting.

The following day began with a session of talks on the theme of cell cycle and growth in development. The changes that occur in cell shape during animal cell division were discussed by Buzz Baum in a great talk addressing the molecular and physical processes that drive these changes, known as 'rounding up'. Other talks in the session included Pia Aanstad introducing hedgehog signalling in the zebrafish retina, and Alison Lloyd addressing regeneration in the mammalian nervous system. Concurrently, our BSCB counterparts held a series of talks on cell growth and differentiation, which covered a wide range of topics, from exciting new stem cell technologies to cell cycle control and genomic imprinting. In particular, Denise Barlow brought the audience on an intriguing tour of her group's work on transcriptional regulation by long non-coding RNAs. Following a lunchtime poster session and workshop on image resolution, talks on the theme of stem cells and cell fate choice were presented. Berenika Plusa presented her work on lineage formation in the early blastocyst, using chimera assays to investigate plasticity in the epiblast and primitive endoderm. Josh Brickman and Sally Lowell also gave interesting talks concerning the priming of embryonic stem cells to steer them towards certain lineages. On a more evolutionary theme, Thomas Butts discussed the neurogenic transcription factor, NeuroD1 and introduced a novel enhancer element which has diverged in structure and activity between amniotes and anamniotes.

Boyan Bonev received the BSDB Beddington Medal for the best PhD thesis in developmentlal biology, and presented his work on the role of the microRNA miR-9 in neural development. The Waddington medal was awarded to Alfonso Martinez Arias, who gave an inspiring talk that looked back on his career in research to thank all those who he had worked with over his years. The presentation was set against the wider context of global affairs from the 60's to present day and ended with a brilliant montage-animation of developmental events. Medal awards were followed by the graduate symposium, which allowed three PhD students; Daphne Verleyen, Debbie McIntosh and Keliya Bai, to present their thesis work to a mainly student audience.

The day was brought to a close with the conference dinner. Excellent food and service was provided by the University of Warwick and the opportunity was taken to hand out substantial prizes for the best talks and posters. The dinner was followed by a disco and then a sensational after party, which saw students, post-docs and PIs networking merrily into the wee hours!

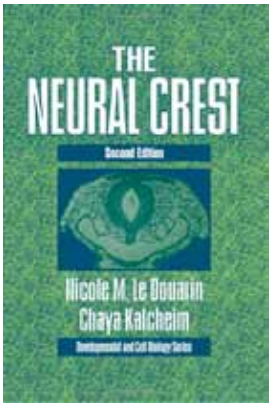
On the final day of the conference, a number of in vitro models of developmental biology were presented. Keith Barr discussed his work using an in vitro system to study the influence of various growth factors on tendon development. David Wilkinson then introduced an in vitro model of cell segregation and boundary formation used to study Eph receptor and Ephrin signalling. Closing the conference, Fiona Watt discussed the epidermal stem cell niche and how stem cells can be studied in vitro to establish their responses to individual signals. Many messages of thanks were made to everyone who played a role in organising the conference, and another successful BSDB meeting was brought to a close.

Haihan Tan-Kings College London
Sorrel Bickley-NIMR
Martin Carkett-NIMR

lunchtime work-shop panelists (from L-R) Sally Lowell, Denis Duboule, Jim Smith, Claudio Stern and Naoto Ueno

The Neural Crest (2nd edition)

Nicole Le Douarin, Chaya Kalcheim
Cambridge University Press



It is a little unusual to review in 2012 a book that was published in 2009, but it has been on the BSDB's list of suggestions for a while, and it is well worth revisiting this classical text.

Nicole Le Douarin has been a field leader in neural crest research during much of her long and productive career. The first edition of *The Neural Crest* came out in 1982, and became "the" core reference text on this area of animal development, a position retained by the second edition published in 1999. The present version is essentially still the 1999 book, but reworked as a digitally printed version. So this is not the place to look for the latest research on the topic. However if you are just entering the neural crest field, or if new researchers in your group will need to learn the background to this subject, then this book is an excellent and comprehensive introduction and almost a must to have on the shelf for reference. No other text draws the field together like this, with critical evaluations of how we know what we know – at least up to 1999, but that was five decades of work. Here you can find clearly collated details of which parts of the crest normally form which types of tissues, with some of the differences between different families of vertebrates. Careful diagrams summarize for example the fate of each rhombomere and information on the HOX codes that specify the rhombomeres. There are chapters on morphology and regulation of development of the various product tissues: the peripheral nervous system and ganglia, cranial mesenchyme and melanocytes, and on lineage determination. A drawback is that all diagrams and images are monochrome, but colour versions on the Internet are referenced in some cases.

It is a shame that the book was not updated more recently, since there have been some major advances, but perhaps the field was considered to have become too large to be covered by a single volume any more. This is still a key reference work that should be available in the library of any university or institute with an interest in animal development.

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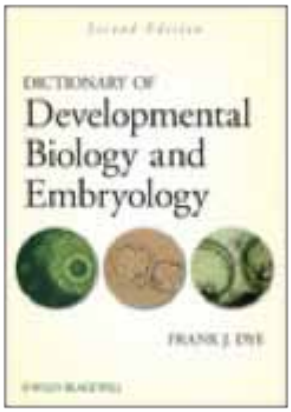
Dictionary of Developmental Biology and Embryology, 2nd Edition Frank J. Dye John Wiley & Sons

ISBN 978-0-470-90595-1 (Paperback)



As developmental biologists, we have to learn and remember a vast array of names and terminologies describing for example the anatomical location of particular structures or a developmental process.
This second edition of the 'Dictionary of developmental biology and embryology' by Frank J. Dye has carefully collated many of these under one roof. Each word is supported by a concise definition. There are several bonuses though: (i) the citation of eminent scientists, with a historical account of their contribution to developmental biology; (ii) reference to prominent pharmacological agents or drugs that have been instrumental in the study of morphogenesis; and (iii) provision of well-labeled sketches, diagrams and colour photographs. The dictionary places greater emphasis on reproductive biology and is a little thin on molecular biology terminology. Nonetheless, it will serve as a valuable and stimulating resource for students and teachers of developmental biology alike.

If there was a developmental biology pub, this book could supply its quiz questions all year round.

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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 James Briscoe (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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