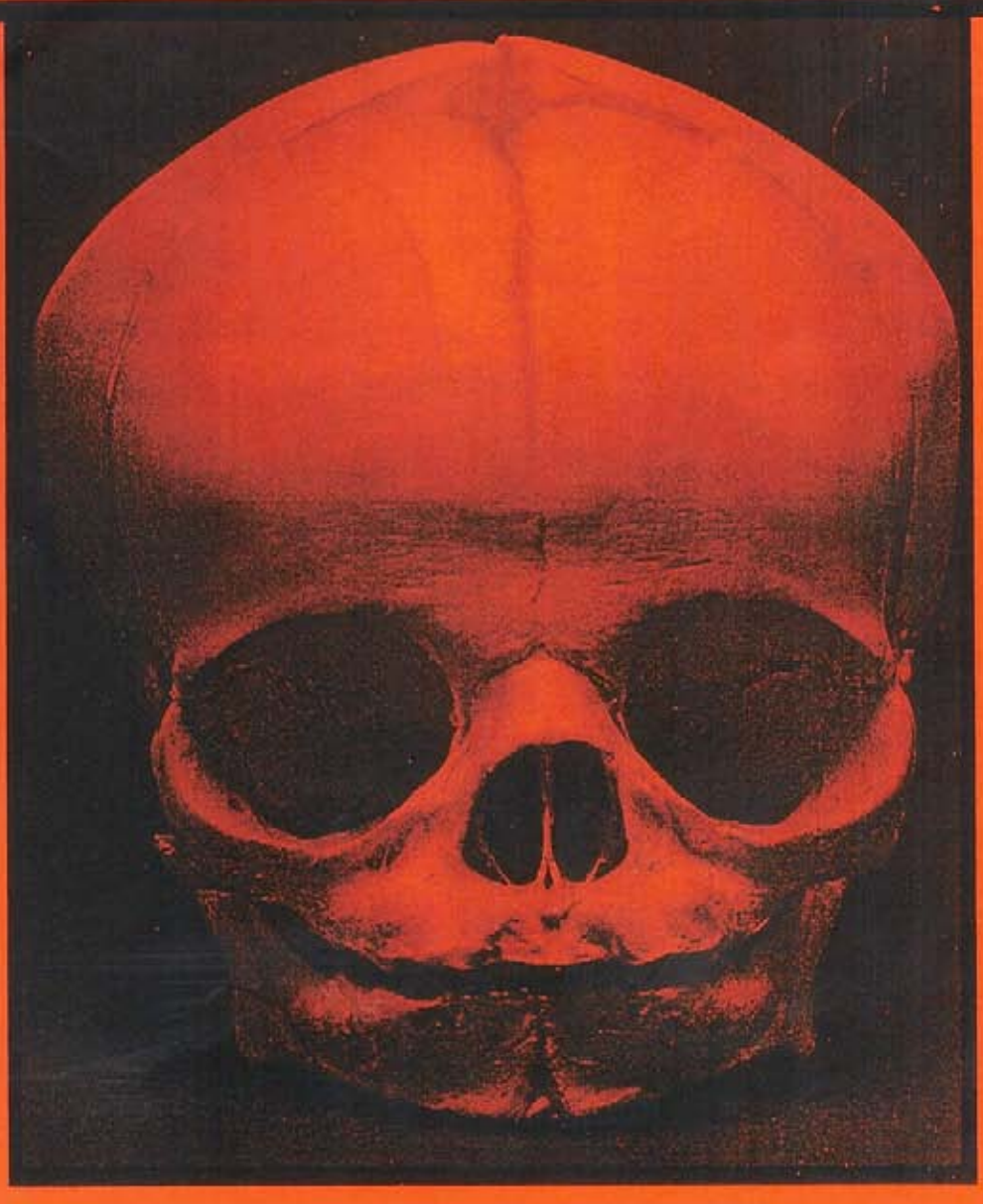
BRITISH SOCIETY FOR DEVELOPMENTAL BIOLOGY
SUMMER 1999 - No. 39

AUTUMN MEETING 1999
15 - 17 September - The Institute of Child Health

CRANIOFACIAL MORPHOGENESIS



BSDB Newsletter
No. 39 Summer 1999

BSDB Autumn MEETING, 1999

CRANIOFACIAL MORPHOGENESIS:

a meeting in memory of

Peter Thorogood

The **Registration Form** and other details can be found in the 'detachable' **Centre Section**
The **Programme** of the meeting appears on **pages 5-6**
**** Note: Registration, Payment and Abstract Deadline is 5th July ****

The Waddington Medal

This year, the BSDB has awarded the Waddington Medal to **Rosa Beddington**, in recognition of her oustanding work on the development of the mammalian embryo.

BSDB Committee

At the AGM **Jim Smith** was succeeded as Chairman by **Phil Ingham**, and **Jonathan Bard** handed over the Treasury to **Ottoline Leyser**. The departing Officers were thanked for their five years of extremely hard and effective work on behalf of the Society. **Sohaila Rastan** and **Kate Storey** were elected to two committee places falling vacant - a full list of the current Committee is given, as usual, on page 15.

In memory of:

Nigel Holder

'From flowers to fish'

Nigel Holder, who has died aged 45, was Professor and Head of the Department of Anatomy and Developmental Biology at University College London, a post he took up in October 1997. During his career, Nigel made major contributions to our understanding of developmental biology, and he pioneered the introduction within UK universities of research-based units that overcome traditional departmental boundaries. His laboratory was the first in the UK to use zebrafish as a model system to investigate animal development and at the time of his death he was studying the segmentation processes which are fundamental to the development of all vertebrates. He was also exploring the genetic basis of human disease by exploiting the similarities between the human and fish genomes.

Nigel was born in Enfield in north London. At Imperial College in 1974 he was awarded a first class degree in Botany, an unusual training for a future professor of Anatomy. His change in direction was stimulated by exciting new work concerning the acquisition of positional information by cells during animal development. These were early days in the field–no one had any idea of the molecules involved–but models that were both plausible and provocative were being proposed and Nigel wanted a piece of this action. Accordingly, he did his PhD with Lewis Wolpert, the major player in the field, and studied the development of the chick elbow joint. Even at this early stage of his career, Nigel demonstrated the characteristics which were to serve him well in the future. He was efficient and goal-directed, managing to finish his PhD within three years. And, like all great scientists, he had an eye for an experiment. One favourite was to design a tiny machine to ask whether movement of the future joint was necessary for its normal development.

After his PhD, Nigel worked with Susan Bryant at the University of Irvine, California. Bryant and her colleagues had proposed the 'polar coordinate' model to explain how cells know where they are in the embryo, and Nigel was keen to see how the model applied to amphibian limb regeneration. In just two years he published seven important papers and on the strength of this work returned to London to take up a lectureship, at the age of 25, in the Anatomy Department of King's College. At this time Nigel knew a lot about plants and limb development but was not an anatomist. Nevertheless, he taught himself the subject in short order and his communication skills ensured he soon became a popular lecturer and enthusiastic teacher of developmental biology. He also threw himself into examining and departmental administration, wrote a textbook with Virginia Walbot, established the first zebrafish aquarium in the country, served as Meetings Secretary for the British Society for Developmental Biology, served on the committees of grant-awarding bodies, and continued his research into limb development and the formation and regeneration of the nervous system.

Perhaps Nigel's greatest skill was to create a friendly atmosphere of collaboration and cross-fertilization, bringing together people with diverse skills and encouraging interaction and debate. He did this both on a small scale within his own lab (which somehow always seemed more fun than anybody else's) and also more prominently by helping to establish (with Roger Patient) the Developmental Biology Research Centre (DBRC) in the Randall Institute at King's College London. This initiative recognised that the traditional university alliances, organised for 100's of years according to teaching departments, could be broken down to allow like-minded scientists from different departments to move together, work together and create a critical mass. Nigel was director of the DBRC and was appointed to a personal chair in 1993. With the award of a SERC Senior Research Fellowship, he was able to devote all his time to running the Centre and to his research. With strong colleagues, and an international Advisory Board, the Centre was a great success, as was Nigel's science. Although trained as an experimental embryologist, Nigel also appreciated the power of zebrafish genetics in the analysis of development, and would frequently emphasise this power to his less enlightened colleagues who persisted in working with genetically intractable organisms like frogs.

In 1997 Nigel became Professor and Head of the Department of Anatomy and Developmental Biology at University College London, a position previously held by J. Z. Young and Geoffrey Burnstock. With his long-term colleague Steve Wilson, he took the opportunity to redesign the laboratories and to install a state-of-the-art aquarium that provided luxurious accommodation for thousands of zebrafish. Within a year, several of his UCL colleagues had started new projects investigating zebrafish development and many

collaborations had been established worldwide. Nigel's enthusiasm and persuasive powers had again brought together scientists from different disciplines to address fundamental problems in developmental biology and there is no doubt that his innovative ideas will continue to shape research and teaching in the college for years to come. Although his time at UCL was tragically short, Nigel had already earned the respect and admiration of all his colleagues not only for his science but also for his intelligence, enthusiasm, wisdom, administrative skills and straightforward unaffected manner.

Throughout his career, Nigel maintained a huge passion and enthusiasm for research and there is little doubt that his current work is amongst the best ever produced by his group. In recent years, he became interested in the mechanisms that underlie segmental patterning of the hindbrain and of the somitic tissue in paraxial mesoderm. His group has shown that signalling through the Eph family of receptor tyrosine kinases mediates cell behaviour at the boundaries between segments and research in progress is aimed at understanding the cellular and molecular events that occur when these receptors are activated. Papers in *Nature*, *Genes and Development* and *Development* all attest to the major contribution that his research group has made to this field. Together with Steve Wilson, Nigel was involved in a variety of genetic screens to identify novel mutations affecting embryonic patterning in zebrafish. It is perhaps fitting that one of the most exciting mutations so far identified is one in which pectoral fin development fails to occur, thus re-establishing Nigel's interest in vertebrate limb development.

Always looking to the future, Nigel was well aware that the major genomic projects were going to have enormous impact upon future developmental biology research. Thus at the time of his death he was setting in motion plans that would strengthen genetics, functional genomics and bioinformatics at UCL, so that once again researchers would continue to be in an environment that maximally benefited scientific progress. It is hoped that many of the innovative and exciting proposals initiated by Nigel will still come to fruition in the future.

Nigel was diagnosed with vasculitis, a rare autoimmune disease, in 1992. Nevertheless, he continued to work, with great courage, at the highest level. It is a measure of the man that UCL appointed him Head of Department in spite of his illness, and to the credit of the College that they did so. He is survived by his wife Alyson and their sons Daniel, aged six, and Michael, who was just 16 days old when Nigel died.

Following Nigel's tragic death a memorial fund has been established. The Fund will be used to encourage collaborative scientific research through the establishment of Travelling Fellowships in Developmental Biology for junior research workers at University College London and King's College London. If you wish to contribute to the Fund, cheques should be made payable to University College London (Holder Memorial Fund) and addressed to:

Mrs Dee Brand (ucgadbr@ucl.ac.uk), Department of Anatomy and Developmental Biology, University College London, Gower Street, London WC1E 6BT.

Jim Smith, NIMR

(This article is based an obituary published in the Guardian of January 21, 1999.)

From the Treasurer

TRAVEL GRANTS

The BSDB awards three types of grants to its members, with preference given to graduate students and postdocs.

BSDB Spring and Autumn meetings: These are the only UK meetings for which there is BSDB support, and grants cover basic travel and conference expenses (but not conference dinners). We are currently able to fund demand but, if numbers increase, preference will be given to members who present posters (but see comment on foreign meetings).

Practical courses: Support of up to £300 is available for these courses and, at the moment, all applicants are funded. If more than about 8 members a year apply, however, a selection procedure will be introduced.

Foreign meetings: This is the category for which there is greatest demand and we cannot fund everyone. Rather than give members grants that are too small to be useful, current policy is as follows:

* No more than two people from one Department or one person from a group will be awarded a grant to go to a particular meeting, and preference will be given to members presenting work.

Also: The Treasurer now has a small additional fund to support other activities eg. travel within the UK, or the USA, in order to visit laboratories. Please email the Treasurer with any appropriate request.

To apply for a travel grant:

* Members should write to the **Treasurer** giving details of the proposed visit and the breakdown of the amount of money requested. They should enclose with the application a letter of support from their supervisor or laboratory head and, if apppropriate, the abstract of the poster or talk they intend to present.

* Application 3-4 months in advance is advised so that the BSDB contribution (£250 max) can be used as a lever to prise the rest of the money from other sources. No grants will awarded in arrears

* **All applications for grants to attend a BSDB meeting must be in the Treasurer's hands a week before the meeting deadline.**

Please note: no-one will be awarded more than one travel grant per year.

** 1994 "student-rate" members who have not upgraded their subscription to **£20 have been humanely culled.**

Small Meetings

Members may approach the **Treasurer** for seed funding to help with organising developmental biology events (eg one-day meetings) that involve other institutions and at which students and postdocs are encouraged to attend and present work.

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**.

Ottoline Leyser, Treasurer

CALLING GRADUATE STUDENTS!

The Graduate Rep on the BSDB Committee is now **Alison Wilkie**. Her job is to communicate Graduate Student Views (good or bad) to the BSDB Committee, so please do not hesitate to contact her - see the addresses page at the back.

BSDB Autumn Meeting 1999

15-17 September at The Institute of Child Health

CRANIOFACIAL MORPHOGENESIS

A meeting in memory of Peter Thorogood

Scientific Organisers: **Andrew Copp, Patrizia Ferretti** and **Paul Sharpe**.

PROGRAMME

Wednesday 15 September

12.00 Registration & Buffet Lunch

1.45 Introduction and Welcome

THE NEURAL CREST Chairperson: Paul Sharpe

2.00 **Gillian Morriss-Kay**
Genetic control of the cell proliferation-differentiation balance in the developing skull vault.

2.30 **Anthony Graham**
Pharyngeal patterning in the avian embryo.

3.00 **Tom Schilling**
The role of the endoderm in craniofacial patterning in zebra fish.

3.30-4.00 Tea

FACIAL PATTERNING Chairperson: Gillian Morriss-Kay

4.00 **Jill Helms**
Molecular control of forebrain and craniofacial patterning.

4.30 **Philippa Francis-West**
Epithelial-mesenchymal interactions during facial outgrowth and patterning.

5.00 **Michael Depew**
Dlx gene regulation of craniofacial patterning.

5.30 onwards Poster Session with Bar and Buffet

Thursday 16 September

TEETH AND THE ORAL CAVITY Chairperson: Patrizia Ferretti

9.00 **Paul Sharpe**
Patterning of the dentition

9.30 **Frits Meijlink**
Role of aristaless-related genes in pharyngeal arch patterning

10.00 **Jeff Murray**
Characterisation of the pitx class homeobox genes in craniofacial development.

10.30-11.00 Coffee

BRAIN PATTERNING Chairperson: Andy Copp

11.00 **Marysia Placzek**
Patterning the anterior midline of the vertebrate face.

11.30 **Ivor Mason**
Regional specification of midbrain and anterior hindbrain.

12.00 **Robb Krumlauf**
Hox genes and the patterning of head development.

12.30 **David Wilkinson**
Role of Eph receptors and ephrins in segmental patterning.

1.00-2.00 Lunch

GENETICS Chairperson: Robb Krumlauf

2.00 **Peter Scambler**
Molecular and developmental genetics of the 22q11 deletion syndromes.

2.30 **Mike Dixon**
Towards a molecular understanding of Treacher Collins syndrome

3.00 **Max Muenke**
Holoprosencephaly as a model to study brain development.

3.30-4.00 Tea

4.00-6.00 REMEMBERING PETER THOROGOOD Chairperson: Cheryll Tickle
Speakers will include:
Richard Hinchliffe, Brian Hall, Andy Copp,
Arthur Wilde, Patrizia Ferretti, Paul Hunt

7.30 Conference dinner

Friday 17 September

CRANIOFACIAL EVOLUTION Chairperson: Brian Hall

10.00 **Moya Smith**
Do jaws and teeth evolve together: a case of non co-option of structures from one function to another.

10.30 **Peter Holland**
The origins of craniofacial patterning: insights from protochordates.

11.00-11.30 Coffee

11.30 **Shigeru Kuratani**
Configuration of the embryonic mesenchyme amd evolution of the vertebrate skull.

12.00 **Jim Hankin**
Evolutionary role of the neural crest in cranial patterning in amphibians.

Lunch and Close of Meeting.

FUTURE BSDB MEETINGS

SPRING SYMPOSIUM MEETING 2000.
University of Warwick

'Pattern Formation and Control of Cell Number'

This meeting will be organised by **Jean-Paul Vincent** and **Jim Smith** and it will be held at the **University of Warwick** on **29-31 March 2000**.

The meeting will explore the links between pattern formation and the control of cell numbers, either by proliferation or death. There will be sessions on: Pattern formation and proliferation; Pattern formation and cell death; Proliferation and cell death in organogenesis and CNS development; Responses to abnormal cell numbers, and Regulation of cell and organ size. The emphasis will be on developing systems - this is not another meeting on cancer/pathological cell growth!

Invited speakers include

Chris Henderson (Marseilles)
Tim Hunt (London)
Bruce Edgar (Seattle)
Monica Murani (NCI)

Christian Lehner (Bayreuth)
David Cobrinik (Columbia)
Jim Murray (Cambridge UK)
Martin Raff (London)
Ernst Hafen (Zurich)
Yves Barde (Matinsried)
Bill Harris (Cambridge UK)
Peter Lawrence (Cambridge UK)
Barbara Thomas (NCI)
Steve Cohen (EMBL)
Fred Berger (Lyon)
Hermann Steller (MIT)
Sally Leevers (London)
Irma Thesleff (Helsinki)
Jon Minden (Pittsburgh)

The meeting will include a half-day workshop, organised by **Jim Smith**, on *Xenopus tropicalis*.

AUTUMN MEETING 2000.
'Branching Morphogenesis'

This meeting will be organised in **The University of York** by **Ottoline Leyser**, on **13-15 September 2000**. Further details will appear in the next Newsletter.

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BSDB GRADUATE STUDENT CONFERENCE

Remember the proposal to hold a graduate student conference?

For various reasons it will not be possible to hold it this autumn!

Further information will appear in the next Newsletter

Topics for Future Society Meetings

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

- **a major Spring Symposium,**
- **a smaller two day Autumn meeting**
- **a one day workshop,**

please get in touch with the **Meetings Secretary, Jamie Davies**.

BRITISH SOCIETY FOR DEVELOPMENTAL BIOLOGY

FINANCIAL STATEMENT - YEAR ENDED 31 JULY 1988

Balance Sheet

1996/97 £		1997/98 £
	Investments	
53,817	Baillie Gifford Managed Fund	88,187
	Current Assets	
15,269	National savings	-
12,605	Barclays Bank High Interest Account	29,742
16,436	Barclays Bank Current Account	13,156
2,585	Barclays Bank: Louis Hamilton Account	2,674
18,209	Abbey National Savings Account	-
65,104		45,572
2,880	Less: Unpresented cheques	1,167
62,224	Net Current Assets	44,405
116,041	**Total Funds**	132,592

Income & Expenditure Account

Income		£	Expenditure	£
Membership (Standing Order)		13,682	Grants (Travel & Courses)	17,563
Membership (Cheques)		930	EDBO etc	600
Capitation Fee (CoB)		11,063	Newsletter	3,283
Meeting Grant (CoB)		14,000	Small Meetings	1,210
Bath Meeting		2,340	Lancaster meeting	20,610
Warwick Meeting		4,945	Committee & administration	3,319
Royalties		153	Membership reimbursement	198
Sale of addresses		1,250	Bank charges	117
Interest and Investment Appreciation:				
National Savings	1,161		Total Expenditure	46,900
Barclays High Interest Account	707			
Barclays Louis Hamilton Account	89		Net Surplus for the Year	7,181
Barclays Current Account	623			
Abbey National Savings Account	1,425		Unrealised Gains on Baillie Gifford	
		4,005	Managed Fund	9,370
Adjustments re 1997 unpresented cheques		1,713	Fund balance at 31 July 1997 B/Fwd	116,041
Total Income		54,081		
			Fund Balance at 31 July 1998	132,592

CENTRE SECTION

This "Centre Section" can be removed without damaging the rest of the Newsletter.
It contains a form for subscribing to **Development** (below), a membership application and banker's order form, and the Registration and Abstract forms for the Spring Meeting.

Development

Members of the BSDB are entitled to a reduction in the subscription price to 'Development'. The general 1999 personal subscription is £231 but, for BSDB members, it is (only) £173.

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To: **Development**
The Company of Biologists Ltd,
Bidder Building,
140 Cowley Road,
Cambridge, CB4 0DL UK.

Please enter my subscription to **Development** for 1999. I undertake not to pass my subscription copies on to a library. I enclose a cheque for **£173** made payable to "The Company of Biologists Ltd".

Signature: .....
Name: .....
Address: .....
.....
.....

Other CoB Journals - the Journal of Cell Science and the Journal of Experimental Biology - are also available at 25% reduced subscription. Write to the above address with your cheque and a signed undertaking that you will not pass your individual copy on to a library.

NOTIFICATION OF CHANGE OF ADDRESS

NAME: .....

Note that from ...../...../ 1999.
my address will be:
.....
.....
.....
Tel; Fax; e-mail:.....

(my previous address was:
.....
.....
.....)

SIGNATURE: .....

Send to: **Dr Ivor Mason,**
MRC Brain Development Programme, Dept of Developmental Neurobiology, King's College, Guy's Campus, London SE1 9RT.

BSDB Autumn Meeting - 15-17 September 1999

GENERAL INFORMATION

VENUE

All of the meeting sessions will be held at the Institute of Child Health in central London. The Institute is easily reached by both mainline rail and underground, and a map showing its location is at the end of this section.

PROGRAMME

The provisional scientific programme, which is given in the following pages, will begin promptly at 1.45pm on Wednesday 15 September. The registration desk will be open from 12 noon on Wednesday and registrants are asked to arrive no later than 1.00pm in order to complete registration and collect their meeting papers. Those with posters for the display are asked to arrive by 12.30pm. A sandwich lunch will be available during registration.

PRE-REGISTRATION

Pre-registration is essential and must be completed by Monday 5 July to avoid a late registration penalty of £20. Registrants must complete the official registration form enclosed and return it with the full appropriate fee to the secretariat at the Institute of Child Health (full details are given on the form). Students wishing to apply must enclose with their registration forms a letter from their supervisors verifying their student status. All registrants will receive a letter of confirmation, an official fee receipt, a hotel booking form and local travel information and a map to help them find their way to the Institute.

MEETING CHARGES

The meeting fees include registration, abstracts, all refreshments, a sandwich lunch and supper on Wednesday, lunch on both Thursday and Friday, and a reception on Thursday evening.

The fees do *not* include the conference dinner on the Thursday evening, or accommodation, which must be paid for separately.

POSTERS AND ABSTRACTS

There will be a poster exhibition throughout the meeting, with a dedicated poster and drinks session on Wednesday evening. All participants are encouraged to submit an abstract for poster presentation at the meeting, and details of how to do this are given in the following pages (How to submit an abstract). Please note that, if you are submitting an abstract for the poster display, you should enclose a hard copy of your submission with the meeting registration form. <u>The closing date for receipt of abstracts is Monday 5 July.</u>

ACCOMMODATION

The Institute of Child Health does not have its own residential facilities, so it will be necessary for registrants to book hotel accommodation in one of the many hotels in the immediate vicinity of the meeting. Block reservations have been made at several hotels, and all booking arrangements may be made free of charge via the Institute's booking agency, Hotelscene. Special booking forms are available from the meeting secretariat, but <u>a booking form will be sent automatically to each registrant with the letter of confirmation and fee receipt.</u>

CONFERENCE DINNER

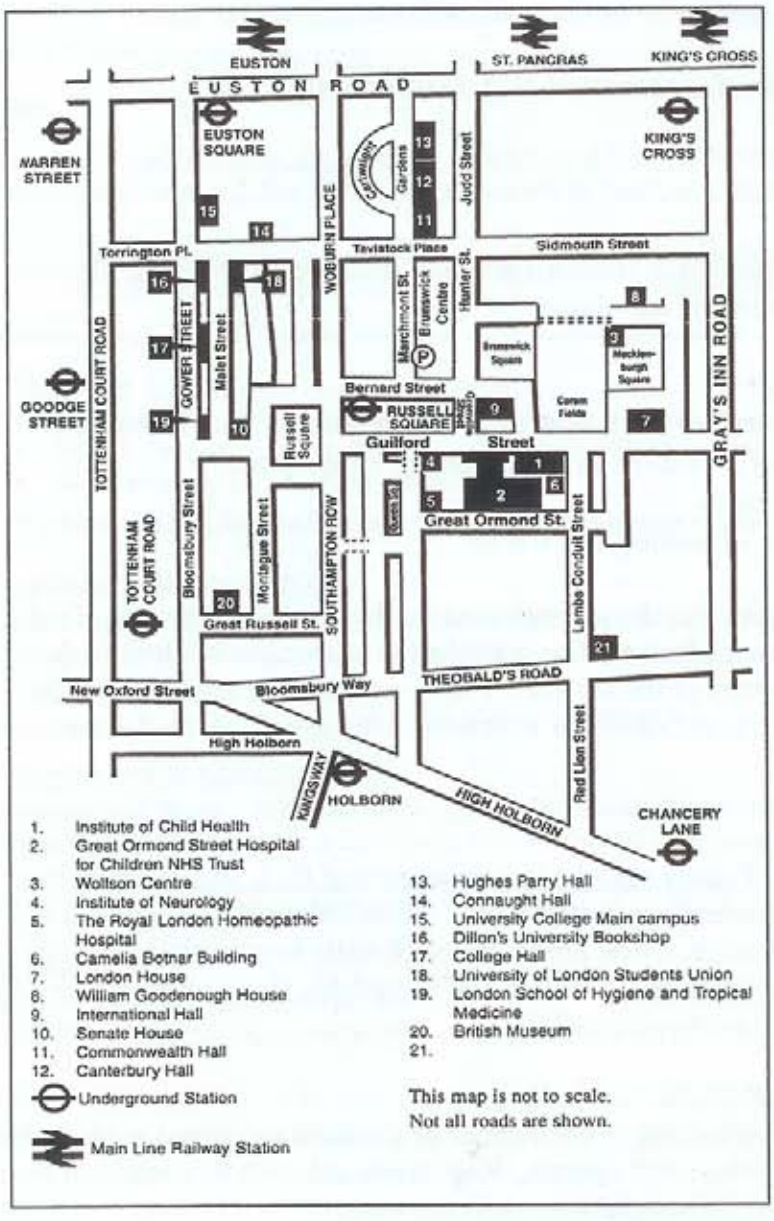
The conference dinner will be held in the new facilities at the Institute of Child Health. Tickets are £20 each. Tickets may be purchased by completing the relevant section on the meeting registration form. Please note that tickets *must* be purchased in advance, and no further tickets will be available after 1 September. Confirmation of payment will be sent to each registrant, and pre-paid dinner tickets will be issued at registration.

SOCIAL PROGRAMME

There will be an informal supper and cash bar on the evening of Wednesday 15 September, to coincide with an evening poster session. The conference dinner will be held on Thursday. Further information on how to apply for the dinner is given below.

CAR PARKING

Please note that the Institute of Child Health does not have any car parking facilities of its own and that, due to its central location, parking facilities nearby are in high demand and are expensive. There are three National Car Parks (NCP) in the immediate neighbourhood:



LOCAL CAR PARKS

Brunswick Square:
£1.10 per hour for first *6 hours*
£10.20 for *9 hours*
£13 for *24 hours*

Judd St:
(6.30am-6.30pm Mon-Fri only, closed at weekends)
£1.70 for *1 hour*
£10.50 for *9 hours*

Southampton Row:
£1.10 per hour for first *6 hours*
£10.20 for *9 hours*
£13 for *24 hours*

BSDB Autumn Meeting - 15-17 September 1999

HOW TO SUBMIT AN ABSTRACT

Abstracts must be sent either

a) electronically by e-mail as an attached document (Microsoft Word format) to **Courses@ich.ucl.ac.uk**

or

b) on a 3.5" floppy disk, in Microsoft Word version 6.0. Please ensure the diskette is clearly labelled with your full name, and the title of your submission.

A printed copy of the abstract should also be enclosed with the registration form.

The deadline for receipt of abstracts is 5 July 1999

FORMAT

The abstract should fit inside a rectangle 16cm x 18cm and should be typed in Arial, point size 11. The abstract should be set out as follows:

- Title
- Name of author presenting work first, followed by names of all other authors
- Name and address of laboratory in which the work took place
- Blank line below address
- Text of abstract, **not exceeding 250 words**

A bound abstract book will be provided for all registrants at the meeting. The text of the abstracts is unlikely to be reformatted, so authors are asked to take responsibility for the quality of presentation and accuracy of the abstract. Please enclose a printed copy of the abstract with the registration form, and draw our attention to any special symbols/characters.

POSTERS

Poster boards will be provided. Posters must be in portrait format (□), and no larger than 60cm wide x 90 cm long. The poster should start with the title followed by the names and addresses of the authors. Information is best presented graphically or pictorially with the minimum of words. Any text should use a font size that is readable from 2 metres away.

SELECTION PROCEDURE

The number of posters will be limited and if the number of abstracts submitted exceeds the space available, a selection procedure will operate. Registrants selected for display of their poster will be contacted by email early in July.

British Society for Developmental Biology Autumn Meeting

'CRANIOFACIAL MORPHOGENESIS'

Wednesday 15 - Friday 17 September 1999

Venue: Institute of Child Health, 30 Guilford St, London WC1N 1EH

REGISTRATION FORM

PERSONAL DETAILS

Prof/Dr/Mr/Ms Surname: _____ First Name: _____

Job Title: _____ Male/Female

Employing Institution: _____ Town: _____

Full Postal Address: _____

_____

Area Code/Postcode: _____ E-mail Address: _____

Daytime Tel No: _____ Fax No: _____

Special Dietary Requirements: _____

FEES

Fees must be paid in full on application. An additional fee of £20 will be payable for all applications received after Monday 5 July 1999. No refunds will be given for cancellations after 1 September 1999.

Standard Members :	£120	[ ]	Student Members* :	£75	[ ]
Standard Non-Members :	£150	[ ]	Student Non-Members* :	£100	[ ]

*Please tick appropriate category. *Applications from students must be accompanied by a letter from the supervisor verifying their student status*

The fees DO include

- *Registration*
- *Meeting abstracts*
- *All refreshments*
- *Sandwich lunch & supper on Wednesday*
- *Buffet lunch on Thursday and Friday*
- *Reception on Thursday*

The fees do NOT include

- *Conference dinner on Thursday*
- *Accommodation*

***** A hotel booking form will be sent to you with confirmation of your registration and fee receipt*****

ABSTRACT SUBMISSIONS

If you are submitting an abstract, please enclose a hard copy of your submission with this registration form. Please also indicate whether you have submitted your abstract by

e-mail [ ] floppy disk [ ]

CONFERENCE DINNER

The conference dinner will be held at the Institute of Child Health on Thursday 16 September 1999. Tickets are £20 each. Places are limited and will be allocated on a first-come-first-served basis.

Do you wish to attend the conference dinner? **YES** [ ] **NO** [ ] No of tickets required: [ ]

PAYMENT

Total fee + dinner ticket price payable : £ _____ . Please make cheques payable to ***'UCL - Institute of Child Health'.*** If paying by credit/debit card, please complete the details below:

Card No: [ ][ ][ ][ ] [ ][ ][ ][ ] [ ][ ][ ][ ] [ ][ ][ ][ ] Expires: [ ][ ][ ][ ]

Visa [ ] Mastercard [ ] Switch [ ] Delta [ ] Solo [ ] Name on Card: _____

Please return your completed form and payment to:
The Courses and Conferences Office, Institute of Child Health, 30 Guilford St, London WC1N 1EH
Tel: +44 (0)20 7829 8692 / +44 (0)20 7813 8394 Fax: +44 (0)20 7831 6902 E-mail: Courses@ich.ucl.ac.uk

APPLICATION FOR BSDB MEMBERSHIP

Full name: ..... **Title** ... **Degrees** .....

Professional address: .....

.....

.....

.....

Tel; Fax, e-mail: .....

Research interests:.....

I wish to apply for Ordinary (£20)/Student (£7.50) membership of the Society (delete as applicable)
Applications must be endorsed by two Society members who should sign below:

..... Name: .....

..... Name: .....

Please return this form, together with the completed Banker's Order (below) to the Society Secretary:

Dr Ivor Mason,
MRC Brain Development Programme, Dept of Developmental Neurobiology,
King's College, Guy's Campus, London SE1 9RT.

For Society Use

Acknowledged: ..... Mailing list: .....

***Please note that the graduate student rate of £7.50 is applicable **for a maximum of 4 years**, after which you must pay the full rate, regardless of your status.

To: The Manager,

..... Bank

.....

.....

Please pay to the **British Society for Developmental Biology,**
Account no: 80867675 (sort code 20-71-74)
Barclays Bank plc, P.O. Box No. 4BP,
Liberty House, 212 Regent Street,
LONDON W1A 4BP.

the sum of £ (pounds) on October 1st 1999 and on the same day each year succeeding unless this instruction is altered in writing by me. This instruction replaces any previous instruction of payment to the British Society of Developmental Biology, which should be cancelled.

Signature: ..... Account No: .....

Name*: ..... Date : .....

Address: .....

.....

* as shown on cheque book

OTHER DEVELOPMENTAL MEETINGS

GENES AND CANCER '99

(UK Molecular Biology & Cancer Network meeting XXVI)

University of Warwick, 13-15 September 1999.

KEYNOTE LECTURE
Harlow (Boston)

GENE EXPRESSION
Berk (Los Angeles) * Tora (Strasbourg) * Schwabe (Cambridge)
Treisman (London) * Hill (London) * Wagner (Vienna)

CHECKPOINTS AND DNA DAMAGE
Murray (San Francisco) * Mittnacht (London) * Raff (Cambridge)
West (S. Mimms) * Pines (Cambridge) * Rotman (Jerusalem)

TUMOUR SUPRESSOR GENES
Lane (Dundee) * Kaelin (Boston) * Clevers (Utrecht) * Hastie (Edinburgh)

BEYOND THE GENOME
Southern (Oxford) * Stratton (Sutton) * Sgouros (London)
Mann (Aarhus) * Legrain (Paris)

POSTERS & TRADE EXHIBITION

Registration £60 (students £30) **Accomodation & meals £160/200**

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APPLICATION FORMS AND FULL DETAILS FROM:
Dr Helen Hurst: FAX 0181 383 3258, Email h.hurst@icrf.icnet.uk
www.icr.ac.uk/ukmbcn/info.htm

Deadlines:
for poster abstracts: October 22nd 1999
for registration: November 3rd 1999.

SEBD 99

11th International Congress of the Spanish Society for Developmental Biology

Barcelona; **1-3 July 1999.**

The programme will include:
*** Inaugural talk by Prof. Edward B. Lewis,**
*** Symposia:**
Embryonic axis formation
Development of the Nervous System
Growth Factors and Signal Transduction
*** Workshops:**
Regeneration
Plant Morphogenesis and Development
Limb Morphogenesis
'Evo-Devo'
***Practical Workshop**
- morphological interpretation of gene expression patterns within the mouse CNS, led by Dr Luis Puelles and Dr Salvador Martinez, strictly limited to 10 participants.

Invited speakers will include:
Michael Akam (Cambridge),
Denis Duboule (Geneve),
Brigitte Galliot (Geneve),
Philip Ingham (Sheffield),
Juan Carlos Izpisua-Belmonte (La Jolla),
Thomas Laux (Tubingen),
Edward B. Lewis (Pasadena),
Olivier Pourquie (Marseilles),
Antonio Simeone (Napoli),
Cheryll Tickle (Dundee).

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08028 Barcelona, Spain.
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Internet: http: //www.bio.ub.es/genet/sebd99

DISCOUNTED JOURNALS, BOOKS etc

BSDB personal subscription rates for year 2000 journals will be in the next Newsletter.:
Development, Journal of Cell Science, Journal of Experimental Biology, Developmental Biology, Trends in Genetics, Trends in Cell Biology, Current Biology, Current Opinion in Genetics & Development, The International Journal of Developmental Biology, BioEssays.

BOOK REVIEWS

VOLVOX: MOLECULAR GENETIC ORIGINS OF MULTICELLULARITY AND CELLULAR DIFFERENTIATION

David L. Kirk
Cambridge Univ. Press, 1998.
ISBN 0 521 45207 4 (hardback)
£60.00

The 'Fierce Roller'

This was the name given to *Volvox* by Linnaeus more than two centuries ago and a century after Leeuwenhoek had first described its movements under his microscope. *Volvox* is the subject of this volume in the Developmental and Cell Biology Series. The author, David Kirk, is one of a small band of contempory researchers who, as he descibes in the preface, was encouraged by his mentor Richard Starr and decided to 'go *Volvox*'.

Volvox is one member of the family of *Volvocales* which all possess 2[n] *Chlamydomonas*-like biflagellated cells held together in a colony, of spherical shape in the case of *Volvox*. It has been common to arrange the members of this family in a hierarchical sequence of increasing organisational complexity and suggest that such a sequence could represent an evolutionary progression leading to the generation of multicellular organisms. *Volvox* is composed of only two distinct cell types with clearly functionally different roles: the majority of flagellated somatic cells and a handful of gonida - the germ cells. The causes of this dichotomy and the origins of multicellularity are the main themes of this book.

The book starts with a general introduction to multicellularity, followed by a chapter reviewing the relationship of *Volvox* to other *Volvocales*. This reveals that *Volvox* species which are morphologically indistinguishable may be genetically very distinct. Thus different *Volvox* species may have evolved from separate unicellular ancestors on more than one occasion and, indeed, this may have happened relatively recently in evolutionary terms ie. within the last 35 million years. Ecological aspects of *Volvox* biology are also considered, particularly from an evolutionary viewpoint, and then an interesting chapter draws together

the details of the complex organisation of the basal apparatus of *Chlamydomonas* and considers the evolutionary constraints this might have placed on morphological innovation.

The meat of the book, however, is the hundred-plus page review of the development of *V. carteri*. This is extremely comprehenesive (I even found my own papers cited here!) and describes each aspect of the normal asexual life cycle including cleavage, 'inversion', extracellular matrix synthesis and hatching. The sexual life cycle is also reviewed, including the male-derived sex pheromone, improbably still active at 10^{-16} M. This is followed by two chapters reviewing *Volvox* genetics. These are probably of most interest to the casual reader, not only because of the dramatically named mutants (eg 'sex reversal', 'gonidia-less', 'dissolver', 'spotty regenerator') but also since the likely mechanisms used to control the germ:soma switch are discussed. In some ways, though, what emerges is a disappointment for me, since the first three gonidal specific genes to be identified are all expressed in the chloroplast. This hardly smacks of a fundamental mechanism to interest animal developmental biologists.

Who will buy this book? At £60, it is probably destined only for libraries and I can't imagine many UK libraries would need a copy! However, this is an excellent synthesis of the past and current literature on *Volvox* and its relatives by a keading researcher in the field, and it has brought me twenty years up to date since I last espied the 'fierce roller'.

Grenham Ireland
University of Manchester.

DEVELOPMENT OF CARDIOVASCULAR SYSTEMS: MOLECULES TO ORGANISMS:

Warren Burggren & Brad Keller (Eds)
Cambridge University Press, 1997.
ISBN 0-521-56072-1, pp360, £50

*

LIVING MORPHOGESESIS OF THE HEART

Maria de la Cruz & Roger Markwald
Birkhauser, Boston, 1998.
ISBN 0-8176-4037-1, pp233, £79

*

HEART DEVELOPMENT

Richard Harvey & Nadia Rosenthal
Academic Press, San Diego.
ISBN 0-12-329860-1, pp530, £110

Typical, you wait to review one, then three come along all together. Books on heart development, that is. Thankfully, they could hardly be more different, in style and in content.

Warren Burggren and Brad Keller work on embryonic cardiovascular function, and this theme runs through most of their multi-authored book. Cardiac membrane structure and function; myocardial contractility; and hormonal regulation feature in Part I, whereas oxygen; pH; temperature; and other environmental factors are covered in Part III. In-between, a second major theme is explored: cross-species comparisons. Here, there are chapters on heart development of invertebrates, fish, amphibia, reptiles, birds and mammals, as well as evolutionary discussions. If you want to know how heart rate develops in the embryo of your favourite crustacean, this is the place to look. In these evo-devo days, I hoped to find a good discussion of the developmental implications of heart evolution, but most of this Part is purely descriptive. There are also chapters on the more usual topics of vasculogenesis, the ECM and endothelial aspects of heart development, and the book concludes with three short chapters on congenital defects, but none of these would be reasons to seek out this volume.

'Living Morphogenesis of the Heart' (de la Cruz & Markwald) is the second in a series edited by Markwald, "Cardiovascular Molecular Morphogenesis" and I look forward to further additions. Although the chapters of this book are individually authored, this is virtually a personal account of de la Cruz's 20 year contribution to heart morphogenesis. Of the ten chapters, she is an author on seven, and Markwald on three. Although there is some review of recent cellular and molecular studies, this is, in reality, a chick heart morphogenesis book. Indeed, it is currently the best compilation of such material available. De la

Cruz's forte has been *in vivo* labelling of chick hearts, and this summary quite rightly emphasises the importance of such dynamic studies for mapping cell movement and fate, and the difficulty in extrapolating from static observations in other species. In parts, however, the text falls into this extrapolation trap when describing the human heart, and there are some pretty fanciful fate maps, for example of sinu-atrial development.

If de la Cruz and Markwald are somewhat retrospective, Richard Harvey and Nadia Rosenthal are unashamedly current in 'Heart Development',where there is hardly a pre-'90's reference (in contrast, Burggren and Keller has nothing past early '96, and de la Cruz and Markwald stops at mid '97). Everything that is "hot" in heart development is in Harvey and Rosenthal and it is the perfect way for anyone, from final-year student upwards, to become familiar with what is going on in the field, world-wide (but with almost nothing from Japan). Of course, much of this will be out of date in three years, but a second edition will take care of that. Across 28 chapters, genetic, molecular, cellular, and morphological aspects are covered by an impressive roster of authors. Indeed, the editors have done just about everything right in assembling this book, except the actual editing. There is noticeable duplication and redundancy between various chapters, and even some inconsistencies. On the other hand, I am willing to put up with a bit of redundancy, if that is the price for the illustrations.

You can judge the style of these books from their covers. 'Development of Cardiovascular Systems' features a line drawing; 'Living Morphogenesis of the Heart' a monochrome photomontage of heart sections, and 'Heart Development' a full-colour computer-generated graphic. Harvey & Rosenthal's book is sumptuously illustrated throughout, and is easily the most seductive of the three. The photographs are good, and the diagrams and schemes are consistent in style and very effective. An optional slide-set (£66) reproduces most of these, and is outstanding for pre- and post-graduate teaching. By comparison, the other two books appear dowdy, but de la Cruz & Markwald illustrate gross heart morphology very well, with both photographs and line drawings. Many of these are reproduced from de la Cruz's original papers, but there are also a good number of useful additions.

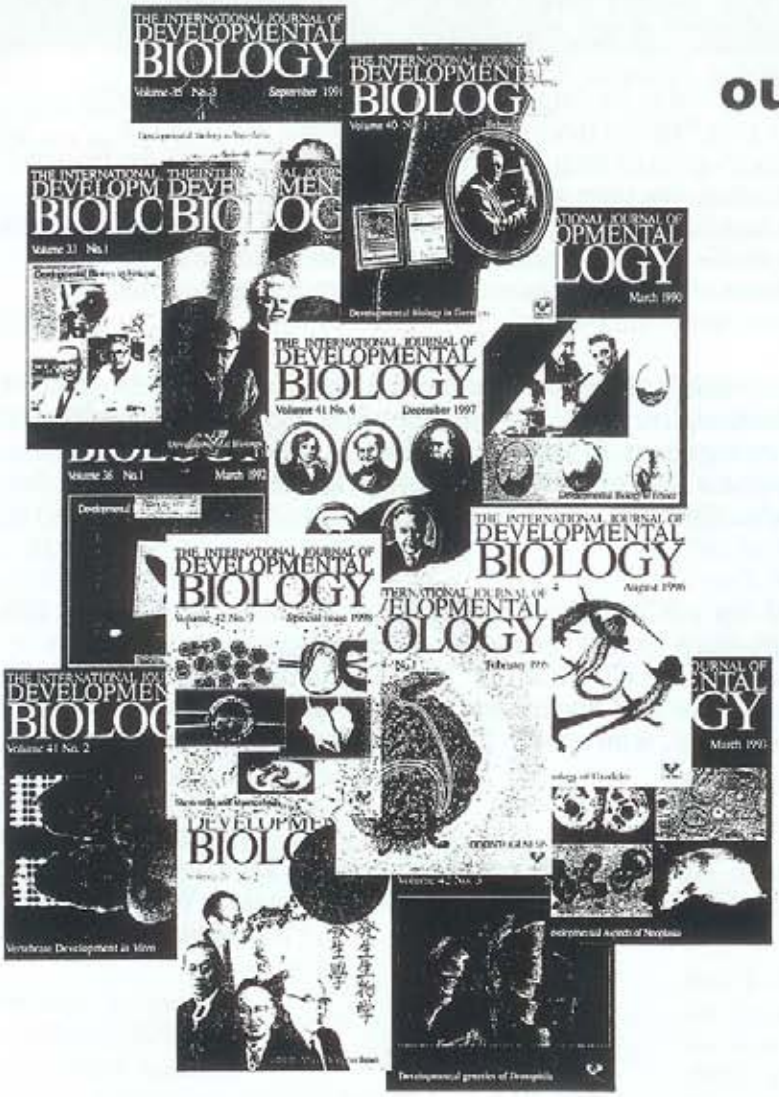
So, it's horses for courses: de la Cruz & Markwald is essential for those using the chick as a model; Burggren & Keller have cross-species morphology and function covered better than anywhere else; and Rosenthal & Harvey is the perfect primer for current studies. I had to retrieve my copies of all three to write this review; overdue loans to various colleagues and students. No need to say more really.

N.A. Brown,
St. George's Hospital Medical School

BOOKS RECEIVED

The following books are accumulating, unreviewed. **If you would like to review one of these, in return for the volume, please contact vernon.french@ed.ac.uk**

1. **The Molecular Origins of Life.**
   A. Brack (Ed): Cambridge University Press 1999, £65.
2. **Molecular Embryology of Flowering Plants.**
   V. Raghavan; Cambridge University Press, 1998, £95.
3. **Pollen Biotechnology for Crop Production and Improvement.**
   K.R.Shivanna, V. K. Sawhney (eds); Cambridge University Press, 1997, £50.
4. **The Shoot Apical Meristem: its Growth and Development.**
   R. F. Lyndon; Cambridge University Press, 1998, £55.
5. **Endocrine Cell Culture.**
   S. Bidey (Ed); Cambridge University Press, 1998, £16.95.
6. **The Biological Basis of Cancer.**
   R.G. McKinnell, R.E. Parchment, A.O. Perantoni & G.B. Pierce
   Cambridge University Press, 1998, £22.95.
7. **Dying to Live: How our Bodies Fight Disease.**
   M.D. Kendall; Cambridge University Press, 1998, £17.95.
8. **Fungal Morphogenesis**
   D. Moore; Cambridge University Press, 1998, £70.



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Human Embryology Teaching CD-Rom

Dr Jeremy Cook (Department of Anatomy and Embryology, University College London) is kindly offering a new computer-aided tool to BSDB members who teach the early stages of Human Embryology.

The program is called 'The Embryonic Disk' and in its single-user CD-ROM form it costs only £12.22, inclusive of mailing -- priced for purchase by individual UCL students. It covers in considerable descriptive detail the first four weeks of human development, the origins of the oocyte and spermatozoon, and twinning, with animations, core and supplementary texts, hypertext index, 920-word technical glossary, over 1000 instant-feedback MCQs and more. New for version 1.16 is a section on the principles of Preimplantation Genetic Diagnosis, illustrated with diagrams, gels and microscope images. Some additional information and 'snapshot' screen pictures can be found at the UCL-managed site "www.ucl.ac.uk/innovations/embryonic".

Although the current version is particularly aimed at the needs of medical students, it can also be used by science students to provide a detailed descriptive framework to help them understand the analytical, experimental studies that they will be learning about. In fact, several Dev Biol PhD students and RAs have said how useful it would have been at the start of their projects, to help them digest some of the new and unfamiliar embryological (and also clinical) concepts and terminology that they were encountering, often for the first time.

Any member of BSDB who teaches (and has a PC running any version of Windows with at least 800 x 600 pixel resolution (SVGA), 64k colours (High Colour) and a CD-ROM drive) can email Dr Jeremy Cook (see below) for a complimentary copy of the CD-ROM of 'The Embryonic Disk'. Please confirm your involvement in or links to an appropriate area of undergraduate or postgraduate teaching, and your postal address, and he will send you a copy, with simple installation instructions and a booklet summarizing its scope.

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BSDB COMMITTEE members

and other useful addresses

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 hestitate to convey them to a committee member. The officers of the society have specific functions. Jim Smith (Chairman) keeps order; Jonathan Slack (Secretary) deals with the membership list; Jonathan Bard (Treasurer) handles the subscriptions and awards travel grants; Ian Jackson (Meetings Secretary) does most of the work in arranging meetings and deciding on venues; Vernon French (Publications Secretary) assembles this Newsletter. These Officials will be happy to answer any questions relating to their subjects.

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BSDB on WWW

We now have a web entry which will give key information about the Society. It can be found at:

http://www.ana.ed.ac.uk/BSDB