

# British Society For Matrix Biology

## MEMBERSHIP SUBSCRIPTION FOR 2003

### ARE NOW DUE – EVERYONE PLEASE COMPLETE

### AUDIT OF MEMBERSHIP DETAILS

Please fill out the following form, EVEN IF NONE OF YOUR DETAILS HAVE CHANGED and return by February 15<sup>th</sup> 2003 to Dr. Rose Maciewicz, Respiratory and Inflammation Research Department, AstraZeneca Pharmaceuticals, Alderley Park, Macclesfield, Cheshire, SK10 4TG, UK

In order for the Society to keep accurate records of our membership and those who pay their subscriptions it is necessary for us to ask you to complete these details however they will not be passed onto any 3<sup>rd</sup> party unless you agree to this.

<b>Title (please circle one):</b>
Professor    Dr.                  Miss                  Ms.                  Mrs.                  Mr.                  Other
<b>First Name(s) please print clearly in block capitals below:</b>
<b>Last Name</b>
<b>Department</b>
<b>Organisation</b>
<b>Street</b>
<b>City</b>
<b>County/State</b>
<b>Postcode/Zip</b>
<b>Country</b>
<b>Email</b>
<b>Tel (inc. std codes)</b>
<b>Fax (inc. std codes)</b>
<b>Position: (tick one of the following)</b>
Academia (HODm Professor, Lecturer)
Pharmaceutical
Postdoc.....
Research Scientist.....
Research Assistant/PhD student.....
Other.....

**Please circle your choices below:**

Have you paid your membership subscription fees by direct debit? **Yes/No**

If yes, please can you check you are paying the correct amount

If no, please send us a cheque immediately and consider setting up a direct debit (see section at bottom of membership form appended to this newsletter). Please note membership fee is collected on Jan. 1<sup>st</sup> of the year. If you fail to send us your 2003 subscription fee we will have to cancel your membership.

# Connective Issues

## BSMB Newsletter

**Committee:** Prof. Bruce Caterson (Chairman), Dr. Rose Maciewicz (Secretary), Dr. Jay Dudhia (Treasurer),  
Dr. Anthony Day, Dr. Alison Reith, Prof. Anthony Hollander, Dr. Graham Riley, Dr. John Tarkenton, Dr. Malcom Lyon

Registered Charity no. 281399

No. 61 December 2002

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Please send letters, comments or editorial to Dr. Rose Maciewicz, Respiratory and Inflammation Research Department,  
AstraZeneca Pharmaceuticals, Alderley Park, Macclesfield, Cheshire, SK10 4TG, UK  
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## Editorial by Rose Maciewicz

Welcome to the 61<sup>st</sup> edition of Connective Issues. You will note that this is a very full edition with hopefully something of interest for all to read over the Festive season.

Items for your attention:

- Call for Committee Member Nominations
- Programme, Registration Form, Directions to and Call for Bursaries for the Spring 2003 BSMB meeting to be held in Oxford March 31<sup>st</sup> to April 1<sup>st</sup>.
- Preliminary Agenda for BSMB 2003 AGM to be held in Oxford on Monday March 31<sup>st</sup> 2003.
- Membership subscriptions for 2003 now due. Please make sure you are a fully paid up member and your details are up to date.
- If you missed the FECTS meeting, which was a great success, Dr. Sally Dickinson *et al.* have written a comprehensive report of the plenary speaker's presentation.
- Finally to those who could not attend the Meeting to mark the Retirement of Professor Mike Bayliss a meeting report written by Dr. John Wardale is included.

I am sure the Society would like to join me in thanking all those folks behind the scenes that made the XVIIth FECTS meeting such a success. This includes the Organising Secretary Dr. Jo Lewthwaite (The Royal Veterinary College, London), the Organising Treasurer Dr. Jay Dudhia (RVC, London), the entire BSMB Committee and Ms. Katherine Lamb (RVC, London).

Don't forget to check our website regularly (<http://www.bsmb.ac.uk>). Between Newsletters all new information received by the Society can be found at the site.

See you all at Oxford for the Spring BSMB 2003 Meeting.

## Current BSMB Committee

### Officers:

- Chairman: Prof. Bruce Caterson (Connective Tissue Biology Lab, Cardiff School of Biosciences, [Caterson@cardiff.ac.uk](mailto:Caterson@cardiff.ac.uk))
- Honorary Treasurer: Dr. Jay Dudhia (The Royal Veterinary College, London; [jdudhia@rvc.ac.uk](mailto:jdudhia@rvc.ac.uk))
- Honorary Secretary: Dr. Rose Maciewicz (AstraZeneca Pharmaceuticals; [rose.maciewicz@astrazeneca.com](mailto:rose.maciewicz@astrazeneca.com))

### Elected Members:

- Dr. Anthony Day (University of Oxford; [ajday@bioch.ox.ac.uk](mailto:ajday@bioch.ox.ac.uk))
- Dr. Alison Reith (Dept of Dermatology, University of Glasgow; [ar113r@clinmed.gla.ac.uk](mailto:ar113r@clinmed.gla.ac.uk))
- Prof. Anthony Hollander (University of Bristol Medical School; [a.hollander@bristol.ac.uk](mailto:a.hollander@bristol.ac.uk))
- Dr. Graham Riley (Soft Tissue Injury and Repair Group, Addenbrookes Hospital; [gpr1003@cus.cam.ac.uk](mailto:gpr1003@cus.cam.ac.uk))
- Dr. John Tarlton (Department of Clinical Veterinary Science, University of Bristol; [john.tarlton@bris.ac.uk](mailto:john.tarlton@bris.ac.uk))
- Dr. Malcolm Lyon (Department of Medical Oncology, Christie Hospital, Manchester; [mlyon@picr.man.ac.uk](mailto:mlyon@picr.man.ac.uk))

## Call for nominations for BSMB Chairman and Committee Members

Three Committee Members (Dr. Anthony Hollander, Dr. Anthony Day and Dr. Alison Reith) are due to retire at the AGM in 2003. In addition the Honorary Secretary Dr. Rose Maciewicz is to retire after 6 years in this role. The BSMB Committee have appointed Professor Anthony Hollander to this position, which he will take up at the AGM 2003.

We are therefore looking for nominations for these 3 Committee positions. Please write to the Secretary with suggestions and or nominations and include the following information:

Name:

Position:

Research Interests:

Why I want to be on the Committee

Note that another BSMB member must second this nomination.

***Nominations must be received by Feb 15<sup>th</sup> 2003.*** If required a postal ballot will be held prior to the AGM.

## Publications of BSMB Meeting Abstracts in International Journal of Experimental Pathology

The abstracts for the Autumn 2001 meeting of the BSMB, which took place on the 3<sup>rd</sup> – 4<sup>th</sup> September 2001 at the University of Norwich on 'The Impact of Proteinases on Matrix Biology', will

be published in Int. J. Exp. Path. in the early part of 2003.

### **Membership Renewal Information**

The membership fees for 2003 are now due. We are requesting that ALL members complete the attached form '**Membership Subscription for 2003**', which can be found on the penultimate page of this newsletter. The completed form with membership payment should be forwarded to the BSMB Secretary. The form should be self-explanatory but if you have any queries please contact the Secretary by e-mail.

Note that the 2003 membership fee still is £10.00 for full members and £2.00 for student members. This represents real value for money. As in the past no subscription is payable by Honorary Members.

If you pay by Direct Debit please confirm that your Bank has the correct details, which are as follows:  
Account name: British Society for Matrix Biology  
Account Number: 09670343  
Sort Code: 60-00-01  
Branch: NatWest,  
City of London Office,  
PO Box 12258,  
1 Princess Street,  
London EC2R 8PA

If you do not pay by Direct Debit please send us a cheque immediately. Please note that the membership fee is collected on January 1<sup>st</sup> of the year. If you fail to send us your 2003 subscription fee we will have to cancel your membership. Please help the Society to stay solvent by paying your membership fees.

Under the provision of the Data Protection Act 1994 s.33(3) we are required to inform our members that we are holding a mailing list on computer disc. The information is only for the purpose of distributing or recording the distribution of articles of information to members and consists only of their names; addresses and other particular necessary for such distribution. A member objecting to the information being held as mentioned should notify the current BSMB Secretary.

### **Spring 2003 BSMB Meeting St. Catherine's College, Oxford "Extracellular matrix: from structure to function"**

The Spring meeting of the BSMB will be held at St. Catherine's College, Oxford on Monday 31<sup>st</sup> March and Tuesday 1<sup>st</sup> April 2003. This meeting is being organised by Drs. Tony Day, Penny Handford and Helen Mardon. For further details contact Tony Day (Tel: 01865 275349; email: [ajday@bioch.ox.ac.uk](mailto:ajday@bioch.ox.ac.uk) or Tracey Ward, who is acting as secretariat for the meeting (Tel: 01865 221003; email: [tracey.ward@obstetrics-gynaecology.oxford.ac.uk](mailto:tracey.ward@obstetrics-gynaecology.oxford.ac.uk)). Full details of the meeting programme and registration/abstract forms can be found at the BSMB website: <http://www.bsmb.ac.uk/>. A copy is also included later in this Newsletter.

The meeting will focus on how recent advances in structural biology have contributed to an increased understanding of extracellular matrix organisation and molecular interactions in both normal and disease processes. It will take place in the tranquil setting of St. Catherine's College, which was designed by the acclaimed Danish architect Arne Jacobsen.

Registration will start at 10:00 in the Junior Common Room. The scientific sessions, posters, trade exhibits and tea/coffee will all take place in the Bernard Sunley Building, a purpose-built conference facility. All accommodation will be within the College.

There will be a conference dinner on the Monday evening served in the College's impressive Dining Hall. After the dinner, delegates will be able to network in the College bar or visit one or two of Oxford's many historic watering holes!

The deadline for registration, and submission of abstracts will be Friday 31<sup>st</sup> January 2003. Please register as early as possible to allow us to organise poster boards, accommodation, catering etc. As usual abstracts will be published in the International Journal of Experimental Pathology.

Some parking spaces are available at the College for conference delegates travelling by car and these will be allocated on a first-come-first-served basis. A parking permit (£5 for the duration of the meeting) can be obtained on arrival at the College lodge. Please note that no lunch will be provided on Monday 31<sup>st</sup> March, but that there are sandwich shops, pubs and restaurants within close walking distance of the College.

## Annual General Meeting 2003

The Annual General meeting will be held at the Spring BSMB Meeting. The preliminary agenda follows. Additional items for inclusion should be sent to the BSMB Secretary, Dr. Rose Maciewicz and arrive no later than March 15<sup>th</sup> 2003.

### Preliminary Agenda

BRITISH SOCIETY OF MATRIX BIOLOGY  
ANNUAL GENERAL MEETING  
31<sup>st</sup> March 2003  
17:00  
St. Catherine's College, Oxford

1. Approval of Minutes of the last AGM held at Brighton Centre, Brighton 29<sup>th</sup> July 2002
2. Matters Arising
3. Secretary's report
4. Treasurer's report
5. Proposal: ex officio membership to Committee
6. Proposal: increase membership fees
7. Election of New Committee Members
8. AOB

## BSMB Bursary for Spring BSMB 2003 meeting

We are offering bursaries to attend the Spring 2003 BSMB meeting in Oxford. Young members of the Society are encouraged to apply for bursaries (up to a maximum of £150 from the BSMB) to assist with attending this meeting. An application form can be found on Society's website <http://www.bsmb.ac.uk> as well as later within the Newsletter.

Bursaries will only be considered if they are submitted on a current BSMB Bursary application form. Applications should be sent to the Secretary and not to the meeting organiser. **A copy of the abstract to be presented at the meeting and a one-page curriculum vita should accompany the application.**

### The deadline for receipt of bursaries to attend the meeting is Feb 15<sup>th</sup> 2003.

The Committee will review the applications rapidly and applicants will be informed by email by end February 2003.

### Criteria for Bursaries

1. Applicants should have been members of the Society for at least 1 full calendar year before the 1<sup>st</sup> day of the meeting for which they are seeking a Bursary.

2. Applicants should be submitting an abstract and presenting a poster for the meeting to be attended.
3. Applicants should be at an early stage of their career (i.e. < 5 years from award of PhD) and unlikely to have access to travel funds. Most often where support for an overseas meeting is given this is the first such meeting they attend. For this reason emphasis is always given to young researchers who are generally in short-term contract positions, i.e. mainly graduate students and occasionally early Post-docs. In addition the Committee will also take into account whether the applicant has received support from the BSMB within the last two years.
4. The work described in the abstract must be novel and likely to be of a quality that would reflect well as a BSMB supported contribution.

## IJEP Poster Competition

### Win a prize for your poster

Will you be presenting a poster at the Spring BSMB meeting? It took hours to put together, you're presenting some good work and you are pleased with how your poster looks. THEN WHY NOT ENTER OUR NEXT POSTER COMPETITION AND WIN ONE HUNDRED POUNDS? The poster competition, which is sponsored by the International Journal of Experimental Pathology, is designed to reward PhD students and Post-docs, who put a lot of time and effort into making an excellent collection of posters at the BSMB meetings each year. If you are a PhD student or Post-doc please enter the competition. You have nothing to lose and you may just win one hundred pounds. If you are a supervisor, encourage your PhD students and Post-docs to enter the competition. Not only will they receive some money, but also more importantly it will draw attention to their work and receipt of the award might be a useful addition to their CV!

### IJEP Poster Competition Rules:

1. It will be held once per year at a BSMB meeting selected by the Committee.
2. The competition will be publicised well in advance.
3. The competition is open to PhD students and recently qualified post-docs (up to 2 years), who must indicate prior to the meeting their intention to enter the competition.
4. Up to 3 scholarships of £100 each will be awarded, dependent on the quality of the presentations. If the quality is low, no awards will be made.
5. The posters will be judged by at least 3 Committee members who will view the posters as well as discuss the work with the poster presenter. Criteria for judging the posters will be: clarity of the presented poster; scientific content; and scientific understanding of the work.

6. The award is to be used by the recipient as they choose.
7. The recipients of the award will be notified at the meeting and will be listed in the next newsletter issue.

## Preliminary Notification

Autumn 2003 BSMB Meeting  
Imperial College London

### In honour of the retirement of Professor Roger Mason

In Autumn 2003 18<sup>th</sup> and 19<sup>th</sup> September, a special BSMB meeting will be held at Imperial College of Science, Technology & Medicine, London to mark the forthcoming retirement of Professor Roger Mason. Roger has been a stalwart of the connective tissue research community for many years, and this meeting will be the ideal opportunity for his many friends and colleagues to extend their best wishes. The meeting will be organised by Professor John Couchman (Imperial College), and Dr. Graham Riley (Rheumatology Research Unit, Box 194 Addenbrooke's Hospital). Its major theme will be related to the physiology and pathology of kidney. Further information will be available in the next Newsletter.

## Spring 2004 BSMB Meeting

Note the date and content of this meeting has yet to be decided. Further details will be sent early in 2003.

## Autumn 2004 BSMB Meeting

University of Bristol

### “Cell Based Therapies for Connective Tissue Diseases”

Advanced notice is given of the BSMB 2004 autumn meeting. This will be held at the University of Bristol and will be organized by Professor Anthony Hollander (A.Hollander@Bristol.Ac.uk). The theme will be “Cell Based Therapies for Connective Tissue Diseases”. Further information will appear in the next Newsletter

## XVIIIth FECTS Meeting Report Brighton, UK

Sally Dickinson, Trevor Sims, Anthony Hollander, Janet Anderson-MacKenzie.

### Sunday 28<sup>th</sup> July

**Ranieri Cancedda** discussed the use of bone marrow stromal cells (BMSC) in the regeneration and repair of bone using a tissue engineering approach. He described the optimal culture conditions required to maintain the differentiation capacity and increase the proliferation rate of cultured cells. The clinical uses of BMSC in both the present and the future were discussed. New bone formation was demonstrated in both nude mouse and large animal models after the implantation of BMSC seeded onto ceramic scaffolds. Finally several clinical cases were presented where full-thickness gaps were treated with autologous BMSC / bioceramic composites to give complete integration with surrounding bone and full functional recovery of the treated limb.

**Matthias Chiquet** explained how cells respond to mechanical stress to influence the biosynthesis and turnover of the extracellular matrix. Tensile stress was shown to dramatically increase fibroblast expression of both tenascin-C and collagen type XII *in vitro* and *in vivo*. Prof Chiquet then discussed possible signalling mechanisms that regulate gene expression in response to mechanical stimuli. Both the tenascin-C and collagen XII genes contain a common mechano-responsive control region, which is not regulated by NFκB. Tenascin-C expression was regulated directly by mechanical stress rather than by the release of a paracrine factor. It was also demonstrated that the signalling pathway leading to tenascin-C expression probably involves Rho-dependent kinase.

**Brendan Lee** used the human genetic mutation, which leads to cleidocranial dysplasia (CCD) as a naturally occurring model to examine skeletogenesis. In the majority of CCD patients, mutations occurred in the RUNX2 / CBFA1 transcription factor. They resulted in a disruption of DNA binding and transactivation or affected the ability of RUNX2 to interact with the cofactor CBFβ. RUNX2 was shown to be required for osteoblast differentiation. In addition, CCD patients also showed a decreased expression of type X collagen and fewer hypertrophic chondrocytes, whilst RUNX2 mutant mice showed abnormal chondrocyte maturation. Therefore RUNX2 was shown to contribute to the tissue-specific expression of type X collagen in hypertrophic chondrocytes.

**Leena Bruckner-Tuderman** spoke about collagen XVII, a transmembrane collagen that acts as an epidermal adhesion molecule in skin. Collagen XVII also exists *in situ* as a shorter soluble form, which results

from shedding of the transmembrane form from the cell surface. ADAM-9, -10 and -17 (TACE) were identified as the enzymes responsible for the shedding process and the cleavage site was localised to a specific region within the NC-16a domain. Laminin 5 is a ligand for collagen XVII and Prof. Bruckner-Tuderman reported that the interaction probably mediates the adhesion of keratinocytes to basement membranes. Mutations in the gene for collagen XVII can result in blistering skin diseases, such as junctional epidermal bullosa, whilst collagen XVII is also a target for autoantibodies in pemphigoid diseases.

### Monday 29<sup>th</sup> July

**Amin Arnaout** discussed the basic structure and common properties of integrins, before explaining new ideas about ligand binding and activation of the receptors. He outlined previous work regarding ligand binding to integrins containing an  $\alpha A$  insertion domain and then showed new work to elucidate the mechanism of ligand binding in all other integrins. Analysis of the crystal structure of extracellular  $\alpha V\beta 3$  integrin identified a number of distinct domains in the  $\alpha$  and  $\beta$  subunits. Indeed the head region of the integrin had a very similar quaternary structure to G-proteins. When the crystal structure of the liganded integrin was examined, binding was shown to occur in a manner similar to that in liganded  $\alpha A$ . It was therefore suggested that, when present,  $\alpha A$  acts as an endogenous integrin ligand.

**Paul Bornstein** described thrombospondins (TSP) 1 and 2 as examples of matricellular proteins. The phenotypes of TSP1, TSP2 and double-knockout mice were discussed. Although healing wounds in TSP2-null mice were highly vascularised, the fact that there was no increase in vessel formation in the TSP1 and 2 double-knockout mouse, indicated the lack of TSP1 nullified the lack of TSP2. That was attributed to the chemotactic properties of TSP1, which has been shown to recruit macrophages early in the course of wound healing and therefore dictates the highly orchestrated healing process. TSP1 and 2 were both shown to inhibit endothelial cell cycle progression without apoptosis, thus providing a mechanism for inhibiting angiogenesis without destroying the endothelial cells.

**Cheryll Tickle** summarised the experimental analysis of skeletal development in chick embryos. She explained the steps involved in the formation of vertebrate limbs, requiring the precise spatial and temporal arrangement of cells and tissues. She explained the role of the diffusible factors retinoic acid, Sonic hedgehog and BMP-2, in a signalling cascade which controls both digit number and digit identity in the developing limb bud. It was also demonstrated that Sonic hedgehog and FGF are required to determine phalange number and elongation. Indeed FGF also plays a role in specifying which phalange acts as the tip of the digit.

**Bjorn Olsen** used human disorders characterised by extremely low or high bone mass, such as osteoporosis-pseudoglioma, to elucidate a role for LRP5 in skeletal development and growth. LRP5 is a Wnt-binding protein that induces osteoblast proliferation and may therefore be a new candidate for the prevention and / or treatment of osteoporosis. In the second part of his talk, Prof Olsen spoke about the role of VEGF in the production and mineralization of bone matrix. VEGF expression, controlled by the CBFA1/ RUNX2 transcription factor, was shown to stimulate angiogenesis. In addition, VEGF has a direct effect on osteoblasts to stimulate matrix mineralization.

### Tuesday 30<sup>th</sup> July

**Agnes Noel** described the roles of MT1-MMP and TIMP-2 in tumour angiogenesis. MT1-MMP is a transmembrane proteinase capable of directly degrading matrix components. However, when bound to TIMP-2, MT1-MMP can activate MMP-2 and therefore play an indirect role in matrix remodelling. Agnes Noel used transfected breast carcinoma cells to study the roles of MT1-MMP, MMP-2 and TIMP-2 in tumour angiogenesis. Over-expression of MT1-MMP was shown to promote tumour formation and vasculisation, independently of MMP-2. That was correlated to enhanced levels of VEGF expression. However, over-expression of TIMP-2 resulted in the down-regulation of VEGF and reduced angiogenesis.

**Peter Friedl** used time-lapse videomicroscopy and dynamic confocal reconstruction techniques to introduce new ideas on tumour cell migration strategies. Cell motility is required for tumour invasion and there are a number of *in vivo* motility methods. Individual cell migration involves the clustering of integrins and MT1-MMP at the leading edge, which help to drive the cell forward. However cells are also capable of moving in a concerted manner as a group. If inhibitors were used to block cell-derived proteases, cells were able to convert to a non-proteolytic, ameboid migration strategy. Blocking of  $\beta 1$  integrins resulted in dissociation of the cell clusters and a scattering of single cells. Therefore, the results highlighted the capability of cells to develop compensation strategies when targeted by inhibitors of adhesion receptors or proteases.

**Kazuyuki Sugahara** informed us about glycosyltransferases, the enzymes involved in the initiation and elongation of disaccharide repeating units in heparan sulfate (HS) and chondroitin sulfate (CS). He identified that HS chain assembly is catalysed by the tumour suppressor EXT gene family proteins and found the specific genes involved in the initiation and elongation procedures. In the second part of his talk, Prof. Sugahara discussed identification of novel chondroitin synthase genes that encode proteins with transferase activities for both  $\beta 1,4$ -GalNAc and  $\beta 1,3$ -GlcA, which are required for chondroitin polymerisation.

**John Couchman** discussed the role of Syndecans, in particular syndecan 4, in the structure of focal adhesions. He described the Syndecan family, of which there are four members in mammals, and their role as transmembrane receptors for matrix, growth factors, cytokines and viruses. They play an important role in wound healing and disease, where they mediate, independently of integrins, signalling to second messengers. Syndecan 4 is a transmembrane heparan sulphate proteoglycan, with a small cytoplasmic domain. Oligomerisation of the domain is promoted by phosphatidylinositol 4,5 bisphosphonate (PIP2) binding. A ternary complex involving two syndecan 4 dimers, PIP2 and protein kinase C $\alpha$  was shown to form in focal adhesions leading to calcium independent activation of protein kinase C $\alpha$ .

### Wednesday 31<sup>st</sup> July

**Johanna Myllyharju** informed us about prolyl 4-hydroxylases (P4H), the key enzymes of collagen biosynthesis. The vertebrate enzymes consist of 2  $\alpha$  subunits and 2  $\beta$  subunits, with the latter identified as protein disulfide isomerase. There are at least 4 different  $\alpha$  subunit isoforms in humans.  $\alpha$ (I) has a diverse tissue distribution whereas  $\alpha$ (II) is predominantly expressed by chondrocytes and osteoblasts. Knockout mice for each  $\alpha$  subunit isoform are being generated. The five P4H  $\alpha$  subunit isoforms in *C.elegans* were discussed. Johanna Myllyharju also described the first plant P4H to be cloned from any source, which hydroxylates proline-containing peptides.

**Monique Aumailley** explained the processing of laminin 5 and its integration into the extracellular matrix. Laminin 5 is a specific component of the dermal-epidermal junction in skin. Prof.Aumailley summarised how its structure was studied using domain-specific antibodies. Skin samples from patients with the rare genetic disorder cylindromatosis were also used. The samples showed an excess of basement membrane, which was loaded with laminin 5. Insufficient processing of laminin 5 resulted in incorrect interactions with integrins. Collagen XVII was also mentioned as a link between the  $\alpha$ 6 $\beta$ 4 integrin in the epidermis and laminin 5 in the dermis. The absence of collagen XVII results in skin blistering due to separation of the dermis and epidermis.

**Peter Ekblom** described the role of laminin-1 in epithelial cell development. The use of function-blocking antibodies and knockout mice revealed a role for laminin-1 and dystroglycan interactions in epithelial development and survival *in vitro* and *in vivo*. In the second part of his talk, Prof.Ekblom discussed the regulation of laminin-1 synthesis by protein kinase B (PKB). Over-expression of PKB resulted in increased levels of both laminin-1 and type IV collagen due to stimulation of synthesis at the level of transcription. In addition, PKB was shown to prevent apoptosis in epithelial cells.

**Marcus Ruegg** discussed the role of agrin in the formation and maintenance of the neuromuscular junction. Agrin is an extracellular matrix protein that binds to laminins and activates muscle specific kinase at the synapse site. The use of RNA interface assays to study candidate genes in the neuromuscular synapse *in vivo* was also highlighted. Finally the hypothesis that a miniaturised form of non-neural agrin could be used to restore muscle function in muscular dystrophy was studied. Mini-agrin was shown to restore muscle function and locomotion in laminin- $\alpha$ 2-deficient mice. Therefore this work demonstrated the possibility of using a specific mini-gene to produce a non-homologous protein that shares the functional properties of laminin to treat muscular dystrophy in patients.

## Meeting Report CURRENT DEVELOPMENTS IN CARTILAGE AND OSTEOARTHRITIS RESEARCH by John Wardale

A meeting was held on September 18<sup>th</sup> at the Royal Veterinary College, London in honour of Professor Mike Bayliss who retired recently due to ill health.

**Brian Johnstone** (Cleveland, USA) *Cell-cell and cell-matrix interactions during chondrogenesis*. The talk mainly covered cartilage and repair. Brian's group uses stem cells from human iliac crest to generate cartilage *in vitro* by monolayer culture followed by pellet cultures in defined media. The pellets commence expression of type II collagen in 3 days with the whole pellet expressing by 14 days. There is also early expression of Fibronectin, n-cadherin, N-CAM and also  $\alpha$ 5 $\beta$ 1 integrin. n-cadherin and N-CAM are early cartilage condensation markers *in vivo* and they have showed that inhibition of either molecule *in vitro* halted cell aggregation following trypsinisation. By utilising a very gentle trypsinisation method (low trypsin and/or inclusion of calcium) n-Cad and N-CAM can be protected resulting in a larger pellet mass shown to be mainly due to increased proteoglycan synthesis. This method may also protect a whole range of cell surface molecules that are beneficial in this system. Optimal cartilage formation was achieved by seeding stem cells into hyaluronan/gelatin scaffolds in the presence of BMP-2 and TGF $\beta$ .

**Charles Archer** (Cardiff, UK) *Articular Cartilage Progenitor Cell*

Charlie described work investigating chondrocyte progenitor cells as a way of understanding the lack of integration between cartilage repair and existing cartilage. Injection of BrDu into joints suggested that some surface zone cells had an extended cell cycle so may be progenitor cells. As these cells were also detectable using antibodies raised against the EDA

domain of fibronectin, fibronectin panning was employed to isolate and semi-purify the cell population from bovine cartilage. Cells from the surface zone that bound rapidly to Fn (<20mins) showed the highest colony forming potential and are likely to be progenitor cells. These cells also expressed high levels of  $\alpha 5 \beta 1$  integrin unlike cells from the mid and deep zone. The most reliable marker for this type of cell in cartilage is Msx-1 (a homeobox gene involved in cartilage development). Progenitor-derived cells were shown to be capable of limited invasion into a killed chondrocyte pellet suggesting that they may be useful for cartilage repair.

**Alice Maroudas** (Haifa, Israel) *Effect of static compression on solute transport in human articular cartilage.*

Markers of matrix age/turnover with respect to aggrecan (D/L aspartate racemization) were used as a measure of matrix turnover. Laspartate racemises to Daspertate with increasing age and is thus a good marker for cartilage age. Thus a lower than normal %D in old cartilage suggests a high turnover and this is what she finds in OA patients. The D/L ratio for the large monomer of aggrecan suggested a turnover of 3.4 years in contrast with the free binding region, which takes 25 years. They then looked at the non-enzymic cross-link, Pentosidine, which also increases in cartilage with age and is reduced in OA aggrecan compared to normal tissue, and found that it matched the D/L ratio. Thus Pentosidine can also be used as a measure of molecular age of aggrecan.

**Hideaki Nagase** (London, UK) *Aggrecanases and TIMP-3 in cartilage matrix breakdown*

Hideaki described his group's work on aggrecanases (mainly ADAM-TS4) and TIMP-3 in relationship to their potential involvement in OA. They have expressed full-length TS4 and truncated forms and determined their properties with respect to aggrecan cleavage. Loss of the spacer domain radically reduced activity against aggrecan. Interestingly, the full length version was not released from the cells and remained attached to the pericellular matrix or the cell surface but all the truncated forms were released into the medium.

Hideaki then described his published work on making recombinant TIMP-3 that has an apparent  $K_i$  of 3.3nM against TS4 and 0.7nM against TS5. He also showed that only TIMP-3 (not 1 or 2) blocks GAG release from IL-1/TNF-treated cartilage explants. Working with TIMP-1 as a model, they have showed that mutagenesis of single amino acids in the active site can create selectivity (e.g. inhibition of MMP-2 but not MMPs 1 or 3). To extrapolate the work to TIMP-3, they have created TIMP-3/TIMP-1 chimeras. Putting part or all of the TIMP-3 active site into TIMP-1 failed to inhibit aggrecanase activity but putting part of the TIMP-1 site into TIMP-3 created an aggrecanase inhibitor. They now suspect the presence of a second smaller interactive site on TIMP-3.

**Dick Heinegård** (Lund, Sweden) *Cartilage in OA. Insights into mechanisms by British-Swedish joint efforts*

Early disease treatment requires either greater understanding of the disease or new diagnostic tests. This talk was directed at the vast number of cartilage matrix molecules that interact with collagen (particularly the Leucine Rich Repeat (LRR) proteins Biglycan, Decorin, Asporin, Chondroadherin, Fibromodulin, Lumican etc.) and their effects on collagen fibrillogenesis. His view of OA is that there are changes in the cartilage matrix long before there is visible damage. And in an OA joint, there is no normal cartilage even if it appears macroscopically normal. They have assayed what they described as "normal", "early OA", "fibrillated OA" and "late OA" tissue for changes in markers (fibronectin, COMP and CILP) and demonstrated that the changes that were originally detected in late OA actually begin to occur in "early OA". An interesting observation was that COMP moves from its normal interterritorial location to pericellular in early OA. COMP is seen as a useful biomarker as it is released into the blood stream. However, fragments of aggrecan are not suitable as a biomarker because the liver mops them up.

**Roger Mason** (London, UK) *Molecular pathogenesis of osteoarthritis in the STR/ort mouse*

The molecular pathology of the STR/ort mouse was described. 85% of animals develop OA signs by 35 weeks of age. There is extensive staining for MMP and aggrecanase-generated neo-epitopes compared to age matched CBA or DBA mice. All MMPs (2, 3, 7, 9, 13, MT1) were up-regulated in the STR/ort mice compared to controls. MMP13 was up-regulated considerably before lesion development. Using a fluorokine assay they have demonstrated increased total and active MMP13 at 5 weeks compared to controls. This supports MMP13 as a key player in OA disease progression in this mouse model of OA.

## Postdoctoral position: Research into Ageing

Post-doctoral research associate required for a BBSRC-funded project (Experimental Research into Ageing initiative) into the mechanisms of ageing of soft tissues.

The positions would be based at the Royal Veterinary College and the Institute of Orthopaedics, UCL, Stanmore, with regular visits to the laboratories of our major collaborator at the University of Lund, Sweden (Prof Dick Heinegård).

This 3-year project will involve explant culture in a custom-built bioreactor device and an analysis of

the influence of fragmented matrix proteins on ageing-related matrix synthesis and degradation.

Starting salaries would be at RA Point 6 (~£26,500/annum including London allowance).

For further information and informal enquiries please contact Dr. Roger Smith ([rksmith@rvc.ac.uk](mailto:rksmith@rvc.ac.uk) 07785 747163) or Dr. Andrew Pitsillides ([apitsill@rvc.ac.uk](mailto:apitsill@rvc.ac.uk) 0207 468 5245).

Application forms can be obtained from the Personnel Office at The Royal Veterinary College, Royal College Street, London, NW1 0TU. 020 7468 5264

**ADVERTISEMENT****"CONNECTIVE TISSUE AND ITS HERITABLE DISORDERS: MOLECULAR, GENETIC, AND MEDICAL ASPECTS"**

SECOND EDITION  
WILEY-LISS, NEW YORK.

EDITED BY PETER M. ROYCE AND BEAT STEINMANN  
SBN 0-471-25185-2

**INTRODUCTION:**

Part I: "Research on Collagen in the Author's Laboratory, 1952-1982" (Karl A. Piez) pp 1-11;

Part II: "Heritable Disorders of Connective Tissue: A Personal Account of the Origins, Evolution, Validation, and Expansion of a Concept" (Victor A. McKusick) pp 13-18.

**BIOLOGY OF EXTRACELLULAR MATRIX**

CHAPTER 1: "Morphology and Chemical Composition of Connective Tissue".

Part I: "Structure of the Skin and Tendon" (Karen A. Holbrook and Lynne T. Smith) pp 19-39;

Part II: "Cartilage" (Nicholas P. Morris, Douglas R. Keene, and William A. Horton) pp 41-65;

Part III: "Bone: Morphology of Bone -- Bone Formation -- Bone Resorption"

(Robert K. Schenk, Willy Hofstetter, and Rolf Felix) pp 67-120;

Part IV: "The Cardiovascular System" (Daniela Quaglino and Ivonne Pasquali Ronchetti) pp 121-144;

Part V: "The Eye" (Richard Mayne) pp 145-157.

CHAPTER 2: "Collagen".

Part I: "The Collagen Family: Structure, Assembly, and Organization in the Extracellular Matrix" (Cay M. Kielty and Michael E. Grant) pp 159-221;

Part II: "Gene Structure" (Mon-Li Chu and Darwin J. Prockop) pp 223-248.

CHAPTER 3: "Elastin and the Microfibrillar Apparatus" (Joel Rosenbloom and William R. Abrams) pp 249-269.

CHAPTER 4: "Glycosylated Matrix Proteins" (Dick Heinegård, Anders Aspberg, Ahnders Franzén, and Pilar Lorenzo) pp 271-291.

CHAPTER 5: "Adhesive Glycoproteins" (Klaus von der Mark and Lydia Sorokin) pp 293-328.

CHAPTER 6: "Keratins" (E. Birgitte Lane) pp 329-341.

CHAPTER 7: "Extracellular Matrix Degradation" (Gillian Murphy and John J. Reynolds) pp 343-384.

**HERITABLE DISORDERS OF CONNECTIVE TISSUE**

CHAPTER 8: "Osteogenesis Imperfecta" (Peter H. Byers and William G. Cole) pp 385-430.

CHAPTER 9: "The Ehlers-Danlos Syndrome" (Beat Steinmann, Peter M. Royce, and Andrea Superti-Furga) pp 431-523.

CHAPTER 10: "Cutis Laxa and Premature Aging Syndromes" (Jeffrey M. Davidson and Maria Gabriella Giro) pp 525-560.

CHAPTER 11: "Pseudoxanthoma Elasticum" (Kenneth H. Neldner and Berthold Struk) pp 561-583.

CHAPTER 12: "Marfan Syndrome and Other Microfibrillar Disorders" (Reed E. Pyeritz and Harry C. Dietz) pp 585-626.

CHAPTER 13: "The Homocystinurias" (Flemming Skovby and Jan P. Kraus) pp 627-650.

CHAPTER 14: "Menkes Disease and the Occipital Horn Syndrome" (Nina Horn and Zeynep Tümer) pp 651-685.

CHAPTER 15: "Epidermolysis Bullosa" (Leena Bruckner-Tuderman) pp 687-725.

CHAPTER 16: "Prolidase Deficiency" (Peter M. Royce and Beat Steinmann) pp 727-743.

CHAPTER 17: "Alpha1-Antitrypsin Deficiency" (Diane Wilson Cox) pp 745-763.

CHAPTER 18: "Heritable Forms of Rickets and Osteomalacia" (Michael P. Whyte) pp 765-787.

CHAPTER 19: "Osteopetrosis" (Michael P. Whyte) pp 789-807.

CHAPTER 20: "Alkaptonuria" (Bert N. La Du) pp 809-825.

CHAPTER 21: "Fibrodysplasia Ossificans Progressiva" (Frederick S. Kaplan, Eileen M. Shore and J. Michael Connor) pp 827-840.

CHAPTER 22: "Disorders of Lysosomal Enzymes":

Part I: "General Considerations" (Ulrich N. Wiesmann) pp 841-848;

Part II: "Clinical Phenotypes" (Jules G. Leroy) pp 849-899.

CHAPTER 23: "Skeletal Dysplasias":

Part I: "Chondrodysplasias: General Concepts and Diagnostic and Management Considerations" (William A. Horton and Jacqueline T. Hecht) pp 901-908

Part II: "Chondrodysplasias: Disorders of Cartilage Matrix Proteins" (William A. Horton and Jacqueline T. Hecht) pp 909-937

Part III: "Skeletal Dysplasias Related to Defects in Sulfate Metabolism" (Andrea Superti-Furga) pp 939-960;

Part IV: "Craniosynostosis Syndromes and Skeletal Dysplasias Caused by Mutations in Fibroblast Growth Factor Receptor Genes" (Clair A. Francomano and Maximilian Muenke) pp 961-991;

Part V: "Defects in Skeletal Morphogenesis" (Stefan Mundlos and Bjorn R. Olsen) pp 993-1023.

CHAPTER 24: "Disorders of Keratinization" (Meral J. Arin, Daniel Hohl, and Dennis R. Roop) pp 1025-1068.

CHAPTER 25: "Alport Syndrome" (Karl Tryggvason and Paula Martin) pp 1069-1102.

CHAPTER 26: "Miscellaneous Disorders"

Part I: "Corneal Dystrophies Due to Mutations in the Kerato-Epithelin-Gene (beta-ig-h3)" (Joel Rosenbloom) pp 1103-1106;

Part II: "Progressive Pseudorheumatoid Dysplasia" (Wafaa M. Suwairi and Matthew L. Warman) pp 1107-1109;

Part III: "The Camptodactyly-Arthropathy-Coxa Vara-Pericarditis Syndrome" (Wafaa M. Suwairi and Matthew L. Warman) pp 1111-1114;

Part IV: "Bruck Syndrome" (Beat Steinmann and Peter M. Royce) pp 1115-1117;

Part V: "Osteoporosis-Pseudoglioma Syndrome" (Beat Steinmann and Peter M. Royce) pp 1119-1121;

Part VI: "Myopathies Due to Defects in Collagen VI" (Beat Steinmann and Peter M. Royce) pp 1123-1127;

Part VII: "Knobloch Syndrome" (Beat Steinmann and Peter M. Royce) pp 1129-1130.

APPENDIX I: "International Nomenclature of Constitutional Disorders of Bone: Osteochondrodysplasias" pp 1131-1140.

APPENDIX II: "Extracellular Collagen Metabolites in Body Fluids" (Leila Risteli and Juha Risteli) pp 1141-1160.

**BRITISH SOCIETY FOR MATRIX BIOLOGY****MINUTES ANNUAL GENERAL MEETING****29<sup>th</sup> July 2003    12:30 – 13:30    Brighton Centre, Brighton**

The Chairman, Professor Tim Hardingham, called the Annual General Meeting of the British Society for Matrix Biology (BSMB) to order at 12:35. Thirteen members were in attendance, plus the BSMB Committee members - Ian Clark, Anthony Day, Jay Dudhia, Tim Hardingham, Anthony Hollander, Jo Lewthwaite, Rose Maciewicz and Alison Reith. Apologies for absence were received from Norman McKie and Graham Riley.

**1. Minutes**

The Minutes of the AGM 2001 held in Hulme Hall, Manchester University on 2<sup>nd</sup> April 2001 were taken as a true and accurate record of that meeting and were accepted.

**2. Matters Arising:**

All matters arising have been discussed at the Committee Meetings during held in 2001/2002.

- **Treasurer's report: Amount of surplus money.** Secretary to ensure that this is revisited after FECTS accounts are completed. Outstanding
- **Election of Chairman and New Committee Members.** Plan (Extend Chairman and all retiring Committee Members till the AGM at FECTS) agreed by Committee; Membership agreement sought and gained; Plan implemented.

**3. Secretary's report**

Membership: As of the today's AGM meeting the Society currently has 540 members on its mailing list. 59 new memberships were received in the last period (AGM 2001- AGM 2002, 16 months inclusive). 89 members had left the Society: 16 resigned; 25 copies of newsletter sent via the post were returned; and a further 48 were returned via an email delivery of the newsletter. At present the Society has 96 student members.

Communications: The Secretary reported that since the last AGM two BSMB Newsletters were sent out: Connective Issue 59 (July 2001); and Connective Issue 60 (March 2002). It was noted that email delivery of the Newsletter was working well. She reported that in the interim, additional information was available from the BSMB website (<http://www.bsmb.ac.uk>). In addition to the Newsletters membership had been circulated with information for the XVIIIth FECTS meeting.

Meetings: The Society had organised two BSMB meetings plus the XVIIIth FECTS in 2001 - 2002 year. All meetings were successful and demonstrated the continuing support and interest in the UK and internationally for the BSMB.

The Spring 2001 BSMB meeting on 'Cellular and Molecular Mechanism in Tissue Engineering' was held in Hulme Hall, Manchester University on 2<sup>nd</sup>/3<sup>rd</sup> April 2001. The organisers of the meeting were Professors Tim Hardingham and Cay Kielty. Four BSMB bursaries were awarded for this meeting: Martin Cordell (MRC Immunochemistry Unit, Oxford); Wa'el Kafienah (University of Bristol Academic Rheumatology); Katherine Lamb (RVC, London); and Gillian McVey (MRC Immunochemistry Unit, Oxford). An IJEP poster competition was also held and the recipient was Katherine Lamb (RVC, London). The abstracts for the meeting can be found in *Int. J. Exp. Path.* (2001) 82(6):A1-A25. The Autumn 2001 BSMB was held at the University of Norwich on the 3<sup>rd</sup> - 4<sup>th</sup> of September. The topic of the meeting was 'The Impact of Proteinases on Matrix Biology' and was organised by Dr. Ian Clark. Two Bursaries were awarded for this meeting: Clare Curtis (University of Cardiff); and Emma Blain (University of Cardiff). The Abstracts are to be published in *Int. J. Exp. Path.* in early 2003.

Future Meetings: The Secretary informed the membership about current/future BSMB meetings.

- XVIIIth FECTS 2002 was organised by BSMB and was being held in Brighton, UK July 28<sup>th</sup> - 30<sup>th</sup>. Bursary recipients were: Elizabeth Bowe (Clinical Veterinary Medicine, University Cambridge); Philippa Callender (CTBL, Cardiff University); Sally Dickinson (University of Bristol Academic Rheumatology); Sian Hancock ((CTBL, Cardiff University); Kerry Elliot (Dept Pathology, University of Edinburgh); Nicola Hartigan ((Wellcome Trust Centre for Cell Matrix Research, University of Manchester; and Paula Muir (RVC, London). Thanks to Dr. Sally Dickinson who will be writing the meeting notes. Spring BSMB 2003 is to be held on 31<sup>st</sup> March / 1<sup>st</sup> April 2003 at St. Catherine's College, Oxford. The topic will be "Extracellular matrix: from structure to function". It is being organised by Drs. Anthony J. Day, Penny Handford and Helen Mardon. For further details please contact [tony.day@bioch.ox.ac.uk](mailto:tony.day@bioch.ox.ac.uk). Note: the Annual General Meeting of the BSMB (2003) will be held on Monday 31st March.
- Autumn BSMB 2003 will be held on 18th/19th September 2003 at Imperial College of Science, Technology & Medicine, London. The topic is "The Molecular Basis of Fibrotic Disease in the Kidney. This meeting is being organised by: Professor John Couchman (Imperial College), and Dr. Graham Riley (Rheumatology Research Unit, Box 194 Addenbrooke's Hospital).
- Spring 2004 BSMB Meeting is to be held at the University of Bristol. The topic is the "Ligament, Bone and Cartilage in Musculoskeletal Disease" and is being organised by: Professor Anthony Hollander ([A.Hollander@Bristol.AC.UK](mailto:A.Hollander@Bristol.AC.UK)).

*(post-meeting note: This meeting will now be held in the Autumn 2004 and will be on "Cell Based Therapies for Connective Tissue Diseases")*

#### 4. Treasurer's report

The Treasurer's report is attached and was accepted as a true record of the financial state of the Society.

- Redemption of Bonds: The Treasurer noted that we were required to redeem 2 bonds ~£30,000 this year. The cash will be deposited into current accounts/National Savings, as with the current Financial Market this is low risk and with reasonable interest.
- It was noted that the FECTS 2002 accounts would be presented at the AGM 2003 meeting. Tim Hardingham warned members that we anticipated the meeting to make a loss, but did not envisage that it would be unmanageable.
- Society members Karl Kadler and Doreen Ashhurst agree that Bursaries and sponsorship of meetings was within the remit of the Society.

#### 5. Election of Chairman and New Committee Members

The Secretary reported that the current BSMB Committee was as follows:

**Officers:** Chairman, Prof. Tim Hardingham (University of Manchester); Honorary Treasurer, Dr. Jay Dudhia (The Royal Veterinary College, London); Honorary Secretary Dr. Rose Maciewicz (AstraZeneca Pharmaceuticals).

**Elected Members:** Dr. Ian Clark (University of East Anglia); Dr. Anthony Day (University of Oxford); Dr. Alison Reith (University of Bergen, Norway) Dr. Norman McKie (Medical School, University Newcastle-upon-Tyne) Dr Anthony Hollander (University of Bristol) and, Dr. Graham Riley (Soft Tissue Injury and Repair Group, Addenbrookes Hospital).

**Co-opted Members:** Dr. Jo Lewthwaite (RVC, London), Katherine Lamb (RVC, London)

At the last AGM meeting it was noted that the Chairman, the Treasurer and four Committee members (Dr. Ian Clark (University of East Anglia); Dr. Anthony Day (University of Oxford); Dr. Alison Reith (University of Glasgow) and Dr. Norman McKie (Medical School, University Newcastle-upon-Tyne)) were due to retire at the AGM 2002 meeting. It was noted that such a large re-organisation during the year we organised FECTS was problematic. The Committee was actioned to derive and implement a succession plan after circulation to the Society for comment. The accepted plan was as follows:

1. The Chairman was to retire at the AGM 2002 meeting and the Committee recommended that Professor Bruce Caterson, who was a past Committee member (1997/1998) take on the post. As no other nomination was received from the Society members, Professor Caterson was elected and agreed to take on the post.

1.2. The Treasurer, Dr. Jay Dudhia, was also to retire at the 2002 AGM. The Committee recommended and Dr Dudhia agreed to extend his tenure for another 3 years.

1.3. That of the four Committee members due for retirement that Drs. Ian Clark and Norman McKie would retire but Drs. Anthony Day and Alison Reith would stay on until the AGM 2003 meeting.

1.4. The co-opted members were to retire at the end of the FECTS meeting and as they were co-opted to help with the organisation of the meeting they would not be replaced.

The Secretary put out a call for nomination for the two Committee posts. The Committee received 2 nomination for this Committee member position: Dr. John Tarlton, Matrix Biology Group, University of Bristol (Nominators: Professors Anthony Hollander and Vic Duance) and Dr. Malcolm Lyon, Department of Medical Oncology, Christie Hospital, Withington, Manchester (Nominators: Professors Ian Nieduszynski and John Gallagher). A postal ballot was not undertaken, as the vacancies on the Committee posts equalled the number of nominations nominations equalled vacancies: It was accepted that the new Committee members would be Drs. John Tarlton and Malcolm Lyon.

The Secretary thus welcomed our new Chariman Professor Caterson and the two new Committee members Drs John Tarlton and Malcolm Lyon. Thanks was also given to Prof. Tim Hardinham, Dr. Jo Lewthwaite, Dr Ian Clark, Dr. Norman Mckle and Ms. Katherine Lamb for all their work on behalf of the BSMB Committee.

The Secretary noted that **the post of Secretary and three Committee Members** (Professor Anthony Hollander, Dr. Anthony Day and Dr. Alison Reith) were to retire at the AGM in 2003. A call for nominations for the three Committee members would be undertaken prior to the AGM in 2003. The Committee proposed that the Secretary Elect be Professor Anthony Hollander. This was accepted.

#### 6. Election of Honorary Members

The Committee proposed that Professor Helen Muir and Dr. Doreen Ashhurst be given Honorary Membership to the Society in recognition of their impact in the connective issue area and services to the Society. These nominations were seconded by Professors Roger Mason and Karl Kadler and it was accepted.

#### 7. Any other business

There was no other business. The meeting was concluded at 13:02.

## BRITISH SOCIETY FOR MATRIX BIOLOGY

### ANNUAL REPORT FOR THE YEAR ENDED 31 DECEMBER 2001

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#### Legal and Administrative Information

The British Society for Matrix Biology is governed by its constitution adopted on 19th September 1980 and is a registered charity, No. 281399. Its address is at the Royal Veterinary College, Department of Veterinary Basic Sciences, Royal College Street, London NW1 0TU. The charity trustees during the year to 31 December 2001 were:

Professor Timothy E. Hardingham (Honorary Chairman)  
Dr. Rose Maciewicz (Honorary Secretary)  
Dr. Jay Dudhia (Honorary Treasurer)

Elected members:  
Professor Anthony Hollander  
Dr. Anthony J Day  
Dr. Alison Reith  
Dr. Norman McKie  
Dr. Jo Lewthwaite  
Dr. Ian Clark  
Dr. Graham Riley

The object of the charity is to advance the science of connective tissue and related subjects; to further public education therein; to promote study and research work on connective tissues and related areas and to publish the results of such study and research.

The trustees' policy is to act as necessary on behalf of the Society; and report on any such actions, as indicated, to the next meeting of the Society.

The charity is dependent on an annual subscription from Ordinary Members engaged in or directing work of the nature indicated above, and on sponsorship money obtained as donations for holding Scientific Meetings & Symposia.

#### Review of Financial Activities

The Society's assets at the end of 2001 totalled £45,697 represented by our current accounts and the National Savings Deposit Bonds. The National Savings Deposit Bonds thus far represented the most suitable form of low-risk investment. The announcement by the Treasury of its intention to redeem such bonds means that they will have to be cashed in by 28th June 2002 at the latest. We therefore need to look into alternative forms of investments that are low-risk yet offer good interest rates. Suggestions from the Membership would be most welcome.

This year proved to be a busy one, with the hosting of the Spring Meeting in Manchester and the Autumn Meeting in Norwich, while at the same time finalising the arrangements for the XVIIIth FECTS Meeting, which the BSMB is organising in Brighton. The organisers of the Spring and the Autumn BSMB Meetings did a splendid job in raising sufficient sponsorship to run their respective meetings within budget. During the year, as part of the preparations of the FECTS Meeting, the organising committee incurred expenses relating to printing and postage for the first announcement and deposit payments for the hire of various venues in Brighton. To separate the financial activities associated with the FECTS Meeting from the normal activities of the Society, I opened a new current account to specifically deal with the income and expenses of this Meeting. This should enable better management of our finances during the forthcoming first quarter when there will be a substantial increase in financial activity.

**BRITISH SOCIETY FOR MATRIX BIOLOGY**

**0 ANNUAL REPORT FOR THE YEAR ENDED 31 DECEMBER 2001**

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We had a modest number of bursary requests compared to 2000 when a good number were for attending the Patras FECTS Meeting. This is again likely to be the case in 2002 for the Brighton FECTS Meeting and we look forward to providing support to our student and postdoc members. The International Journal of Experimental Medicine (IJEM) once again sponsored the poster competition winner at the Manchester Meeting. On behalf of the Committee and the Membership, I would like to thank the Journal of their continued generosity towards this particular award.

This concludes my financial report for 2001.

On behalf of the board of trustees



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**Jay Dudhia, Treasurer**

**Date: 2nd May 2002**

**BRITISH SOCIETY FOR MATRIX BIOLOGY**

**INDEPENDENT EXAMINER'S REPORT TO THE TRUSTEES OF THE  
BRITISH SOCIETY FOR MATRIX BIOLOGY**

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We have carried out an independent examination of the accounts set out on pages 4 to 6 for the year ended 31st December 2001.

**Respective responsibilities of trustees and examiner**

As the charity's trustees, you are responsible for the preparation of the accounts; you consider that the audit requirement of Section 43(2) of the Charities Act 1993 (the Act) does not apply. It is our responsibility to state, on the basis of procedures specified in the General Directions given by the Charity Commissioners under Section 43(7)(b) of the Act, whether particular matters have come to our attention.

**Basis of independent examiner's report**

Our examination was carried out in accordance with the General Directions given by the Charity Commissioners. An examination includes a review of the accounting records kept by the charity and a comparison of the accounts presented with those records. It also includes consideration of any unusual items or disclosures in the accounts, and seeking explanations from you as trustees concerning any such matters. The procedures undertaken do not provide all the evidence that would be required in an audit, and consequently, we do not express an audit opinion on the view given by the accounts.

**Independent examiner's statement**

In connection with our examination, no matter has come to our attention

1. which gives us reasonable cause to believe that in any material respect the requirements
  - to keep accounting records in accordance with Section 41 of the Act; and
  - to prepare accounts which accord with the accounting records and to comply with the accounting requirements of the Act

have not been met; or

2. to which, in our opinion, attention should be drawn in order to enable a proper understanding of the accounts to be reached.

**Benjamin Taylor & Co.,  
Chartered Accountants,  
5, Wigmore Street,  
London, W1U IHY.**

**Dated: 2nd May 2002**

**BRITISH SOCIETY FOR MATRIX BIOLOGY****Statement of Financial Activities  
for the year ended 31st December 2001**

	Notes	2001		2000	
		£	£	£	£
Incoming resources		3,601		3,571	
Subscriptions and donations					
Income from meetings	2	18,437		20,494	
Interest receivable		1,642		1,539	
Sundry Income		104		250	
<b>Total incoming resources</b>		<u>          </u>	23,784	<u>          </u>	25,854
Resources expanded					
Meeting expenses	2	14,457		23,349	
Other Meeting expenses		-		395	
Bursaries/grants	3	425		2,600	
Travelling expenses		754		320	
General expenses		330		200	
Printing, postage and stationary		118		349	
Insurance		189		133	
Secretarial Charges		100		100	
Accounting fees		411		422	
<b>Total resources expended</b>		<u>          </u>	(16,784)	<u>          </u>	(27,868)
<b>Net incoming/(outgoing) resources for the year</b>			<u>7,000</u>		<u>(2,014)</u>
<b>Fund balances as at 1<sup>st</sup> January 2001</b>			38,697		40,711
<b>Fund balances as at 31<sup>st</sup> December 2001</b>			<u>£45,697</u>		<u>£38,697</u>

**BRITISH SOCIETY FOR MATRIX BIOLOGY****Balance Sheet****As at 31st December 2001**

	Notes	2001		2000	
		£	£	£	£
Investments	4		30,705		29,255
Current assets					
Debtors	5	3,195		1,871	
Bank deposits		8,293		10,071	
Cash at bank		4,015		1,102	
		<u>          </u>		<u>          </u>	
Liabilities					
Amounts falling due within one year	6	(511)		(3,602)	
		<u>          </u>		<u>          </u>	
			14,992		9,442
			<u>          </u>		<u>          </u>
Total assets less current liabilities			£45,697		£38,697
			<u>          </u>		<u>          </u>
Funds					
Unrestricted funds at 31 <sup>st</sup> December 2001			£45,697		£38,697
			<u>          </u>		<u>          </u>

These accounts were approved by the trustees on the 2<sup>nd</sup> May 2002 and signed on its behalf by:



Trustee: Dr. J. Dudhia

Dated: 2<sup>nd</sup> May 2002

## BRITISH SOCIETY FOR MATRIX BIOLOGY

## Notes to the Accounts

For the year ended 31st December 2001

## 1. Accounting policies

The accounts have been prepared under the historical cost convention, on the accruals basis and in accordance with the Statement of Recommended Practice "Accounting by Charities".

2. Meetings	Total	Manchester	Norwich
Income during the year	18,437	9,006	9,431
<b>Expenditure:</b>			
Speakers & conference costs	(14,457)	(8,233)	(6,224)
<b>Surplus for the year</b>	<u>3,980</u>	<u>773</u>	<u>3,207</u>

3. Bursaries/Grants	Total	Newcastle	Manchester
Bursaries	<u>£425</u>	<u>£180</u>	<u>£245</u>

## 4. Investments

Investments represent the holding of two National Savings Bonds by the society.

Bond 1	14,726
Bond 2	<u>15,979</u>
	<u>£30,705</u>

5. Debtors	2001	2000
	£	£
European Tissue Repair Society	-	1,222
Interest receivable – National Savings	619	649
FECTS Meeting	2,181	-
FECTS Committee	229	-
FECTS Postage	166	-
	<u>3,195</u>	<u>1,871</u>

6. Liabilities	2001	2000
	£	£
Newcastle Meeting Expenses	-	631
London Meeting Expenses	-	2,460
Secretarial fees	100	100
Accountancy fees	411	411
	<u>511</u>	<u>3,602</u>

**British Society for Matrix Biology**  
**Extracellular matrix: from structure to function**  
**St. Catherine's College, Oxford**  
**31<sup>st</sup> March/1<sup>st</sup> April 2003**

**Programme**

**Monday 31<sup>st</sup> March**

Registration: from 10.00 – Junior Common Room

12.45 Welcome – **Tony Day**

12.55 Introductory Lecture - **Iain Campbell** (Oxford, UK)  
*Modules and the matrix*

***Session 1. Matrix remodelling***

13.30 **Dan Rifkin** (New York, USA)  
*Participation of matrix in the activation of latent TGF-**b**: fact or fancy*

14.00 **Gill Murphy** (Cambridge, UK)  
*Strategies for focussing TIMP function to the cell surface*

14.30 Talk selected from abstracts

14.45-15.30 Tea, posters/trade exhibit

***Session 2. Glycosaminoglycan structure/function***

15.30 **John Sheehan** (Chapel Hill, USA)  
*Structure and dynamics of hyaluronan*

16.00 **Barbara Mulloy** (NIBSC, UK)  
*Heparin-protein interactions in the extracellular matrix*

16.30 **Jeremy Turnbull** (Birmingham, UK)  
*Heparan sulphates: structural diversity creates biological specificity*

**17.00-17.30 BSMB Annual General Meeting**

17.30-19.00 Posters

19.00- Conference Dinner

**Tuesday 1<sup>st</sup> April**

**Session 3. Fibrillar structures (part 1)**

09.00 **Dick Heinegård** (Lund, Sweden)

*Extracellular matrix as a complex assembly of molecules with a wide variety of functional domains involved in matrix assembly and regulation of functions*

09.30 **Jennifer Potts** (Oxford, UK)

*Binding of pathogenic bacteria to human fibronectin*

10.00 Talk Selected from abstracts

10.15 **Cay Kielty** (Manchester, UK)

*Biological roles of fibrillin microfibrils*

10.45-11.15 Coffee

**Session 4. Fibrillar structures (part 2)**

11.15 **Penny Handford** (Oxford, UK)

*Structure/function studies of the integrin-binding fragment from fibrillin-1*

11.45 **Erhard Hohenester** (London, UK)

*Insight into genetic diseases from structural analysis of matrix proteins*

12.15 Talks selected from abstracts

12.45-14.15 Lunch/Posters

**Session 5. Matrix receptors**

14.15 **Helen Mardon** (Oxford, UK)

*Structural Requirements for the Biological Function of the FIII 9-10 Domains of Human Fibronectin*

14.45 Talk selected from abstracts

15.00 **Martin Humphries** (Manchester, UK)

*The structural basis of integrin activation*

15.30 **David Stuart** (Oxford, UK)

*To Be Announced*

16.00 Closing Remarks – **Dick Heinegård**

16.15 Tea/Close of meeting

**British Society for Matrix Biology, Spring 2003 BSMB Meeting**  
**31<sup>st</sup> March/1<sup>st</sup> April 2003**  
**St. Catherine's College, Oxford**

**Extracellular matrix: from structure to function**

**Closing date for receipt of registration form: 31 January 2003**

Title ..... Family Name ..... First name .....

Correspondence Address

.....  
.....  
.....  
.....  
Postcode

Tel: ..... Fax: ..... Email: .....

Special dietary requirements (please specify e.g. vegetarian):

.....

**Registration fees**

**Conference Dinner 31 March**

Registration for BSMB Members £35

Conference dinner at St Catherine's College £22

Registration for non-members £45

Fees include coffee both days, lunch on 1 April

**Accommodation fees:**

Rooms are available at St Catherine's College for £38 per night, including full English breakfast  
For en suite facilities £16.50 supplement per night  
Please tick requested nights

30 March  31 March  1 April

En suite facilities required (limited number available) £16.50 per night

Total enclosed £

All cheques should be made payable to **"British Society of Matrix Biology"**

Please return completed registration forms to:  
Miss Tracey Ward  
Nuffield Department of Obstetrics and Gynaecology  
Level 3, Women's Centre  
John Radcliffe Hospital  
Oxford, OX3 9DU

Email: [tracey.ward@obs-gyn.ox.ac.uk](mailto:tracey.ward@obs-gyn.ox.ac.uk) Tel: 01865 221003 Fax: 01865 769141

**Getting to St. Catherine's College:****By rail**

Trains run at least once an hour between Oxford and London, and twice an hour during peak times. Oxford is also on the main cross-country routes. For details of times and fares, telephone 08457 484950 (24 hours). Or visit <http://www.rail.co.uk>

**By coach/bus**

Two companies run frequent buses, 24 hours a day, between London (Victoria Bus Station) and Oxford. These are the Oxford Bus Company telephone 01865 785 400, and Oxford Tube telephone 01865 772 250. There are also direct and regular services to Oxford from Heathrow and Gatwick airports operated by the Oxford Bus Company telephone 01865 785 400. Coach services from other parts of the country are available with National Express

Taxis

Courtesy Cars: 01865 874787 or 873497

ABC Taxis: 01865 770077 or 775577

**By car****From London and the East**

Leave the M40 motorway at Junction 8 signposted Oxford A40. Continue for approximately 5 miles; the A40 meets the Green Road roundabout, go straight across, following signs for Headington and the City Centre; continue straight on for 2 miles through Headington until you reach another roundabout - The Plain - and take the last exit. Cross Magdalen Bridge, and at the traffic lights turn right into Longwall St and take the first right into Manor Rd after St Cross Church. Cross the river and you have arrived.

**From the South**

Leave the A34 at the first Oxford exit. At the roundabouts follow signs for the city centre. Pass the Park & Ride on your left, take a right at the second set of traffic lights into Donnington Bridge Road. At the lights turn left, continue straight on until you reach a roundabout - The Plain. Go straight over and cross Magdalen Bridge; at the traffic lights turn right into Longwall St and take the first right into Manor Rd after St Cross Church. Cross the river and you have arrived.

**From the North**

Leave the M40 at Junction 9, following signs for Oxford A34. Continue for approximately 8 miles, then take the Oxford/ Cheltenham exit. At the Pear Tree roundabout take the second exit. At the next roundabout (Wolvercote) take the second exit along the A40, following signs to M40 London. At the next roundabout take the right exit, following signs for Summertown and the City Centre. Continue for approximately 2 miles, then turn left into Parks Rd (opposite church). Pass the Park and Museum on the left, and take the next left into South Parks Road. The road bends sharply right, past more playing fields; take the next left into Manor Road just before the road bends sharply right again. St. Catherine's is ahead of you.

**From the West**

We recommend that visitors bypass the City and approach from the North. Leave the M4 at Junction 15 and follow signs for Oxford A420. Continue along the A420 for approximately 30 miles. Rather than continue through the western side of the City, at the A34 interchange, head north following signs for M40 but leave at the next exit. At the Pear Tree roundabout follow signs to City Centre, passing the services and Park & Ride; at the next roundabout (Wolvercote) take the second exit. From here follow directions as from the North. For those approaching on the A40, cross straight over the Wolvercote roundabout and follow the directions as from the North

**On Foot:**

St Catz is on the periphery of the City Centre and we do recommend that visitors take a taxi to the College, especially if they are bringing luggage. However for those who are keen to walk the following directions apply:

**From the City Centre:**

The City Centre to St Catz will take between 15 and 20 minutes. Most local bus stops are located on Cornmarket and Queen Street, and national buses arrive at Gloucester Green Bus Station on George St. From any of these, you should make your way to Broad Street (opposite Debenhams). Continue to the end of Broad St, (past the Sheldonian Theatre on the right). At the traffic lights go straight on into Holywell St, and at the end of this turn left into St Cross Road. Cross the road at the pedestrian crossing (St Cross Church is on your right) and take the next main right into Manor Road. Go over the bridge and St Catz is on your right.

**From the Train Station:**

Taxis are recommended from the station, but if you are happy with a 30 minute walk, turn left as you leave the station area. The Royal Oxford Hotel is directly in front of you; keep left and walk along Hythe Bridge St, (past Blackwells

on the left). At the end walk straight across into George St. At the end of George St Debenhams Store is on the left - from here walk straight over into Broad Street and follow the directions as from the City Centre.



**BRITISH SOCIETY FOR MATRIX BIOLOGY**  
**BURSARY APPLICATION FORM for Spring 2003 BSMB Meeting**

**Application form to be completed and returned with**

- a copy of the completed Conference application form
- a copy of the abstract to be presented at the meeting
- a one page *curriculum vitae*, to:

BSMB Secretary  
 Dr Rose Maciewicz, Senior Principal Scientist  
 Respiratory and Inflammation Research Department, AstraZeneca Pharmaceuticals  
 Alderley Park, Macclesfield, Cheshire, SK10 4TG UK

The applicant should have been a member of the British Society for Matrix Biology for 12 months prior to the start date of the meeting for which the bursary application is being applied. Applicants will be informed as soon as possible and should not await such notification before submitting their Conference application.

Name.....Date.....

Address.....  
 .....  
 .....  
 .....

e-mail:.....tel:.....fax:.....

Conference Name.....

Venus and Date.....

Costs (accommodation, registration, travel).....  
 .....

Additional sources of support (Indicate other sources to which you will apply for financial assistance to attend the Conference and the amount you might expect to receive.)

Support statement (A brief supporting recommendation by the applicant's Head of Department or Supervisor.)

Date.....Name (HOD).....Signature.....

Date.....Signature of Applicant.....

# BRITISH SOCIETY FOR MATRIX BIOLOGY MEMBERSHIP APPLICATION FORM

Note an Electronic Copy of this form can be found at <http://www.bsmb.ac.uk>

To be completed in BLOCK CAPITALS. Please include appropriate membership fee. Return to:  
BSMB Secretary, Dr Rose Maciewicz, Respiratory & Inflammation Research Area, AstraZeneca Pharmaceuticals, Mereside, Alderley Park,  
Macclesfield, Cheshire, SK10 4TG UK. email: [rose.maciewicz@astrazeneca.com](mailto:rose.maciewicz@astrazeneca.com)

NAME

ADDRESS

EMAIL:  TEL:  FAX:

TWO SPONSORING MEMBERS: *Should you not know any member of the Society personally, please write to the Secretary.*

Name  Name

Signature..... Signature.....

SIGNATURE OF APPLICANT.....

FEES: Full membership £10 p.a.....Student membership £2 p.a.....(Please indicate with a tick)  
STUDENT MEMBERSHIP (To be signed by the student's supervisor)

I certify that  is a non-salaried research student.

NAME  SIGNATURE.....

The application should be accompanied by a cheque, made payable to the BRITISH SOCIETY FOR MATRIX BIOLOGY, for the subscription for the current year January to December. Please complete the banker's order for future subscriptions. Should your application be unsuccessful your cheque and banker's order will be returned.

DO NOT DETACH

### BANKER'S ORDER

To: (name and full address of your bank)

Please pay on the 1st January to **National Westminster Bank plc, City of London Office, PO Box 12258, 1 Princess St., London, WC2R 8PA; Code No. 60-00-01T,**

the sum of  £ (  POUNDS, in words) for credit to the account of the BRITISH SOCIETY FOR MATRIX BIOLOGY,

Account No. 09670343 quoting reference no.  (leave blank, for BSMB records only) and make similar payments annually on the 1st January until this order is cancelled in writing, charging such payments to:

my/our  account title name

account number

Signature: .....Date.....