

# Newsletter

British  
Andrology  
Society

[www.britishandrology.org.uk](http://www.britishandrology.org.uk)

Summer 2011

## A message from the Editor

Welcome to our 2011 Summer edition of the BAS Newsletter.

I hope you enjoy this edition of our newsletter. If you would like to contribute to future editions please email the Editor at the email below.

Editor [secretary@britishandrology.org.uk](mailto:secretary@britishandrology.org.uk)

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## A message from the Chairman

Dear All

This is my last preface to the BAS Newsletter as chairman of BAS. I have been the chairman of BAS in the last three years but my first involvement in activities of BAS goes back to 1992-1993 when Robin Harrison invited me to speak at one of the advanced workshops of the Society.

Thereafter when I moved to England and started to work as a research associate in the Institute of Zoology of the Zoological Society of London, my supervisor Bill Holt asked me if I was interested in participating in the BAS steering committee meetings. I accepted his invitation and my first steering committee meeting was in Coventry on 11 September 2001. I remember that day very well. We were in the middle of the meeting when the shocking news of the attacks on the twin towers in New York reached us. Coming back to London on the train I thought it was the beginning of a new world war. It was a disturbing feeling.

Initially I served the society as a membership secretary. My first task was to sort out the membership database of the Society. It was not clear who was a member and who was not, which addresses of the members were up to date, which members retired or sadly passed away. I tried to bring an order to the membership database working with two treasurers of the society. By collecting the right amount of membership fees on time, and by employing a professional administrator Mrs Gottlieb I managed to improve our financial status. I remember the first time when I suggested hiring a professional administrator many steering committee members were dismissive about it. They voiced their concerns about the costs of this. As time passed most of them realised how beneficial it was for the Society. I also proposed an increase of the membership fees. In the past there was a period that we thought that the financial reserves of the Society would not last longer than 4 - 5 years and thereafter the society will cease to exist. Fortunately this did not happen. By careful monitoring of our expenses and by finding alternative income sources we not only kept our budget in balance but managed to provide grants for young members of the society to attend scientific meetings, and subsidise society meetings.

It was one of my wishes to create a stable source of income for BAS. I hardly know any reputable and long lasting learned



society without its own journal. A scientific journal will bring a medium of communication with membership as well as prestige and weight to the society. But when it is old and mature can be a source of steady income for the society. When I become the chairman, I proposed that BAS start to publish its own scientific journal. But the steering committee did not agree. They thought it would be a too risky undertaking and I gave way to them. But to this date I think we should have tried it. There is no great achievement without risks. I am sure if I had persevered I would have managed to persuade the committee.

The committee however, supported most of my other ideas. Actually over 90% of my suggestions were approved. I remember in my early days as a committee member I asked whether BAS could produce a medal to honour the service of its members like in other learned societies. At first this motion was turned down. When I became the secretary of the society, and later the chairman I was successful in gaining support for this motion. Sue and Sheena did a superb job in designing the Setchell medal and we awarded the first prize to Paul Watson in 2007.

Finally I think I will leave the society having left for it another legacy. During my time as chairman I asked and pushed for changing the society legal statues to become a charity and be registered as a company limited. Bill Holt helped immensely with this process and followed it through the labyrinths of various law firm corridors. I expect in the next few weeks this process will be complete and BAS has been registered as an official charity.

I think if I look back at my achievements and contributions to BAS, it has been mainly to change it to become a professional society, to run its affairs on time and try to contribute to the advance of the science of andrology. I am happy to hand over the society in a firm shape from legal, administrative and financial status to my successor. Today BAS is a well recognised and respected learned society that is being consulted by various government bodies on future of education and research in the United Kingdom and the world. Its membership has increased and even the number of participants in the society meetings

is growing. I look at all these achievements as points of strength for our society.

I would like to thank our secretary Dr Jacqui Piner, our treasurer Professor Sheena Lewis and all other members of the steering committee for their immense support. Work of the past three years would not have been done without their help. Last but not least I would like to thank all members for their support and help during my period as the chairman of the Society.

I believe that there is a great future ahead of the nearly 35 years old BAS. As it is becoming older it is becoming a more than ever respected and recognised organisation. However, we must be always vigilant to look out for novel activities which can offer our members even more benefits. And we must never forget that the sole purpose of taking office in a society is to serve the members of the society to the best of your ability. I hope and trust that BAS will survive hard times a head and still grow in the future years.

Alireza Fazeli



**You may have noticed the new logo at the top of this newsletter and, or on our website. As part of our move towards charitable status the committee felt it was really time the Society had a fresh, more professional image. The start of this is our new logo which was kindly designed for us by the ImaginationRoom team ([www.imaginationroom.co.uk](http://www.imaginationroom.co.uk)). Over the coming months watch out for the launch of our twitter feed and a brand new website with fresh content. Let us know what you think of the changes and what you would like to see!**

Contact: [secretary@britishandrology.org.uk](mailto:secretary@britishandrology.org.uk)

**From Neurones to Sperm** is an article prepared by Steve Publicover where two important publications in *Nature* have revealed the identity of the sperm progesterone receptor.

His comments are on two important publications in *Nature* revealing the identity of the sperm progesterone receptor.

A human sperm is a very small cell faced with an immense task – it must ascend the female tract, find the cumulus-oocyte complex, penetrate the cumulus, undergo acrosome reaction, penetrate the zona pellucida and then fuse with the oocyte membrane. Current estimates are that less than one in a million cells reaches the oviduct and only a fraction of those may be competent to fertilise. However, it seems likely that the sperm receives significant assistance from both the cells lining the female tract and the cumulus-oocyte complex. There is good evidence that these cells (and the substances that they secrete) regulate the activities of the sperm, triggering appropriately timed changes in motility (perhaps including provision of chemotactic cues) and priming and inducing the acrosome reaction. Identifying the messenger substances involved, understanding how they work (and exploiting this information to control fertility) are key goals of reproductive research. Two papers published earlier this year, in the journal *Nature*<sup>1,2</sup>, have provided a huge step forward in understanding how activities of human sperm are regulated.

The ovulated oocyte is embedded within the mass of granulosa cells that form the cumulus. These cells, which have been highly synthetically active during maturation of the oocyte, continue to produce the steroid progesterone as the oocyte travels down the oviduct. Sperm approaching the cumulus-oocyte-complex encounter very high concentrations of the steroid (estimated to be in the micromolar range). More than 20 years ago it was shown that exposure of sperm to progesterone (at nanomolar-to-micromolar concentrations) causes an ‘immediate’ influx of  $Ca^{2+}$  (a key cellular messenger) into the sperm<sup>3</sup>. Since then scores of papers have described  $Ca^{2+}$ -dependent effects of the hormone on acrosome reaction,

motility (hyperactivation and chemotaxis) and capacitation and several studies have shown a correlation between the magnitude of progesterone-induced influx of  $Ca^{2+}$  into sperm and ability of sperm to fertilise.



Progesterone is the best-characterised regulator of human sperm function and appears to play a highly important role in preparing and/or enabling sperm to fertilise.

The rapidity of the effect of progesterone on  $Ca^{2+}$  concentration, and the fact that sperm are almost certainly transcriptionally inactive, leave no doubt that this action of the hormone is achieved by a ‘non-genomic’ mechanism rather than through ‘classical’ steroidal regulation of transcription (as occurs in the oocyte). Such rapid, non-genomic actions of steroids also occur in somatic cells and many have been elucidated and found to be variations on well-characterised signalling cascades. However, throughout all this time and despite numerous attempts, the nature of the ‘non-genomic’ action of progesterone on human sperm (and the receptor at which it acts) has remained a complete mystery.

Earlier this year the mystery was, at last, solved. With hindsight it is not at all surprising that progesterone proved so hard to pin down. The two laboratories who finally succeeded were both neurophysiology specialists, with backgrounds in ion channel study. Studying ion channels in sperm has become particularly exciting in the last 10 years for two reasons. In 2001 two laboratories published the discovery of CatSper, a completely novel, sperm-specific  $Ca^{2+}$  channel<sup>4,5</sup>. This channel is found in the tail of sperm cells and nowhere else, and is very unusual in that it is controlled by pH inside the sperm. When it is open it allows  $Ca^{2+}$  to enter the sperm and causes hyperactivation. Mouse sperm lacking CatSper are infertile. Secondly, in 2006, Kirichok et al perfected a method for application of patch clamping (a method for directly measuring the flux of ions across a cell’s membrane) to sperm<sup>6,7</sup>.

This technique has been around for more than 30 years and has proved so powerful in the study of nerve cell function that it won its inventors (Erwin Neher and Bert Sakmann) the Nobel Prize in Physiology/Medicine in 1991. Applying it to sperm, minute and motile, has for years appeared impossible - development of a technique for doing so is a breakthrough of huge significance for understanding how sperm work. Applying patch clamp to human sperm and observing the ionic currents switched on by progesterone has at last answered the progesterone question. It turns out that the progesterone receptor on sperm is CatSper. Progesterone binds directly to the channel (or to an attached protein subunit) and opens it, so that  $\text{Ca}^{2+}$  enters the cell. Other processes downstream of this  $\text{Ca}^{2+}$  may be required for the many effects of progesterone on sperm function, but it is probably fair to say that if the action of progesterone on CatSper is not working right then the sperm are aren't working right. This is a huge step forward in understanding how the female tract and the cumulus oocyte complex 'talk' to the sperm. It offers the possibility of developing pharmacological tools for improving success rates in treatments for male-factor infertility and also may provide a new route for development of male contraceptives. Stan Meizel once described sperm

as 'a neuron with a tail'<sup>8</sup> – it certainly looks as though lessons from studying nerve cells may prove very useful in understanding how sperm work!

Steve works on signal transduction and the regulation of activity in human sperm at the School of Biosciences at the University of Birmingham.

1. Lishko PV, Botchkina IL, Kirichok Y. (2011) Progesterone activates the principal  $\text{Ca}^{2+}$  channel of human sperm. *Nature* 471:387-9
2. Strünker T, Goodwin N, Brenker C, Kashikar ND, Weyand I, Seifert R, Kaupp UB. (2011) The CatSper channel mediates progesterone-induced  $\text{Ca}^{2+}$  influx in human sperm. *Nature* 471:382-6
3. Blackmore PF, Beebe SJ, Danforth DR, Alexander N. (1990) Progesterone and 17 alpha-hydroxyprogesterone. Novel stimulators of calcium influx in human sperm. *J Biol Chem.* 265:1376-80
4. Ren D, Navarro B, Perez G, Jackson AC, Hsu S, Shi Q, Tilly JL, Clapham DE. (2001) A sperm ion channel required for sperm motility and male fertility. *Nature.* 413:603-9
5. Quill TA, Ren D, Clapham DE, Garbers DL. A voltage-gated ion channel expressed specifically in spermatozoa. *Proc Natl Acad S U S A.* 98:12527-31
6. Kirichok Y, Navarro B, Clapham DE. (2006) Whole-cell patch-clamp measurements of spermatozoa reveal an alkaline-activated  $\text{Ca}^{2+}$  channel. *Nature* 439:737-40
7. Lishko PV, Botchkina IL, Fedorenko A, Kirichok Y. (2010) Acid extrusion from human spermatozoa is mediated by flagellar voltage-gated proton channel. *Cell.* 140:327-37.
8. Meizel S. (2004) The sperm, a neuron with a tail: 'neuronal' receptors in mammalian sperm. *Biol Rev Camb Philos Soc.* 79:713-32.

## 2012 JAPAN PRIZE

Information about fields eligible for the 2012 (28th) Japan Prize

British Andrology Society Would you kindly be advised that fields eligible for the 2012 (28th) Japan Prize have been decided and this information is being delivered to the scientific societies which may have some interests in the fields.

Our Foundation has selected the fields of studies eligible for the 2012 (28th) Japan Prize, which are “Environment, Energy and Infrastructure” and “Healthcare and Medical Technology”. At the same time, our Foundation has decided the fields eligible for the Japan Prize 2013 to 2015 as well.

For the details, please refer to the attached documents.

Also, you can have the details of the Japan Prize and the laureates on our website (<http://www.japanprize.jp/en/>).

Just for your information, our Foundation is now in the final stage of selecting the 2011 (27th) Japan Prize winners in the fields of “Information and Communications” and “Bioscience and Medical Science”. The names of the laureates will be announced in Tokyo in mid January 2011.

## BAS Annual Meeting 2010

The annual meeting in November 2010 was hosted by AstraZeneca at the Alderley Park site in Cheshire. The scientific sessions were chosen to have particular interest to the pharmaceutical industry regards looking at areas where underlying disease impacts male fertility.

The 1<sup>st</sup> scientific session focused on viruses in the male genital tract and the clinical management of men with viral infections including HIV, HBV and HCV. Dr Nathalie Dejuq-Rainsford provided an inciteful overview of these important viral diseases, where semen and sexual intercourse are involved in their transmission. Dr Gilling-Smith then followed up describing the current protocols in use to "wash" semen from infected men for use in assisted fertility techniques where the recipient partner is infection free. It was heartening to hear how successful these regimes have been at preventing infections during these assisted techniques.

The 1<sup>st</sup> day was finished by a talk by BAS committee member Prof Sheena Lewis discussing the effects of recreational drugs on male reproduction. Perhaps, not unsurprisingly, some aspects of our hedonistic lifestyle eg cigarette smoking, alcohol, marijuana (etc) are associated with adverse effects on male reproduction. Less well known and studied is the influence that phosphodiesterase -5 inhibitors (eg Viagra) can have on sperm function. These products are used in fertility clinics for collecting samples but there is evidence that in some models, they can cause a premature acrosome reaction. The relevance of this for affecting IVF success rates when used specifically to aid semen collection for assisted reproduction is as yet unknown.

The scientific session on the 2<sup>nd</sup> day was a symposium looking at effects of metabolism, age and "diabetes" on male reproduction. Dr Anthony Coll started the session by eloquently describing the interlinks between the melanocortin / leptin system and reproductive function highlighting similarities and differences between mouse knockouts and human syndromes. The next two talks, from Prof Bonde and Prof Huhtaniemi, focussed on clinical and epidemiological data regards male fertility in obesity and aging populations respectively. Both of these talks were excellent summaries of the field given by individuals who have a long background in their topics. Prof Bonde's talk demonstrated that although male obesity is associated with impaired fecundity in terms of delayed time to pregnancy, the factors accounting for that delay are not well defined. Prof

Huhtaniemi presented "myth busting" data from the large EU "aging" study regards what signs & symptoms are specifically associated with low circulating testosterone in the older man such as reduced frequency of sexual fantasies and morning erections. (Conclusion: "grumpy old man" syndrome is associated with age and not specifically with testosterone status!)

Between the main scientific sessions, the audience were treated to presentations at two extremes of the academic spectrum. At one end were the short communications from young scientists where, to fit into their allocated 15 minutes, the students had to be extremely focused on the specifics of the immediate project objectives. They all did this very professionally and provided inciteful snapshots into their areas of interest. At the other end of the spectrum was a tour-de-force presentation from Prof Trevor Young, on behalf of himself and his wife Ching Hei Yeung, the joint recipients of the Brian Setchell medal. Trevor's presentation reflected on a joint lifetime of scientific exploration, drawing together experimental observations which had amassed over decades of work, to make connections and conclusions which will remain valid for many more decades yet to come. It was a privilege to be there and hear such a talk.

The conference dinner was in a local Italian bistro restaurant in the Cheshire "village" of Alderley Edge. Everyone was wined & dined in style & the evening provided plenty of opportunity to discuss ideas for future collaborations. The BAS chairman, Dr Fazeli, presented an award to Joao Correia from University of Birmingham, the winner of the young scientist short communications with his talk on "Characterisation of a novel sperm olfactory receptor", plus presented Ching Hei Yeung and Trevor Young with their Brian Setchell Award medals. As the conference organizer, I was particularly pleased that everyone made the short walk back to their Alderley hotels safely (if not soberly!).

I hope everyone enjoyed the conference and appreciated the rich mix of UK based and international speakers which this programme provided.

Dr Jane Stewart  
Conference Host, AstraZeneca Pharmaceuticals

## BAS 2010 Young Researcher Experience – Joao Correia

This was my first BAS meeting, and I can't really put in words what a great experience it was!



Firstly I was a bit surprised by the relatively small number of people attending compared to other meetings I have been to. This, however, proved to be quite an advantage as with a smaller group it was a lot easier to interact with everybody and I finally got to put faces to the names I keep seeing in the papers I read, and the best of it was that I had great opportunities to create new links with both well established and also younger scientists working in the field.

Organisation wise, the meeting was faultless: AstraZeneca were a great host and things went smoothly from start to finish. As for content, I found it well balanced and quite diverse, and at least for me, very educational! All the speakers brought something new to play and this diversity gave me a great overview of the work being done around male fertility, setting the stage for new ideas and possibilities for my research.

I was also lucky enough to have been given the chance to showcase my work in front of this great audience, within the Young Researcher competition. I felt really privileged to share the stand with three other young scientists who presented really exciting and innovative work, and the fact that the committee decided in my favour, especially given the quality of the other competitors' research, was a great surprise and indeed a great honour! I have to thank the organisation for this opportunity and the Reproductive Biology and Genetics group in Birmingham, for all their friendship, support and intellectual contribution.

BAS 2010 has been a memorable experience, and one I will surely want to repeat in the future!

Joao Correia

## Member Profile - Asif Muneer

Mr Asif Muneer is a Consultant Urological Surgeon based at University College London Hospital. Having completed his Higher Surgical Training in Oxford, Mr Muneer undertook further visiting fellowships in Switzerland and also the University of Paris as well as completing a Senior Fellowship at University College London Hospitals. His subspecialist interests are general andrology and men's health together with male infertility including microsurgical reconstruction for obstructive azoospermia and microdissection TESE for non-obstructive azoospermia.

. He also investigates men with hypogonadism, testicular conditions and undertakes corrective surgery for Peyronie's disease and surgery for erectile dysfunction. He has published widely on all aspects of Urology including several book chapters. Mr Muneer is also Honorary Senior Lecturer at University College London (UCL). He completed his higher degree (MD) at UCL investigating the physiology of smooth muscle dysfunction. Mr Muneer has published widely on all aspects of urology as well as co-editing a book entitled 'Viva Practice for the FRCS(Urol)' and has written 10 book chapters. As well as lecturing to trainee surgeons, Mr Muneer lectures throughout the UK and is involved in teaching at the the Genito urethral Masterclass and the Royal College of Surgeons Core Surgical Skills Course.

### New Members

A warm welcome to all new members of BAS who have joined since our last newsletter!

- Marek Ciesielski, Poland
- Wayne Vessey, TDL Andrology
- Funmi Adenubi, Andrology Solutions
- Helen Bayram, University of Liverpool
- Helen Dela Roca, Andrology Solutions
- Julia Simpson, University of Hull
- Jennifer Morris, University of Birmingham
- Hermes Augusto Buarque Gadelha, University of Oxford
- Dimitris Ioannou, London Bridge Fertility
- Tracey Coop, Writtle College
- Macaulay Olatunde, The Knares Medical School Practice
- Andrew Thompson, Oxford Fertility Unit

If you would like to join the BAS please contact our Membership Secretary at [secretary@britishandrology.org.uk](mailto:secretary@britishandrology.org.uk).

## BAS IS ON FACEBOOK!

Here it is the link to British Andrology Society (BAS) Young Researcher page on Facebook:

[www.facebook.com/home.php#!/group.php?gid=101137873284101](http://www.facebook.com/home.php#!/group.php?gid=101137873284101)

The link is also accessible on international networks for young researchers in male fertility website:

[www.youngresearch.eu](http://www.youngresearch.eu)

### Subscriptions

Just a gentle reminder that your 2011 memberships subscription is now due. If you pay by standing order you need not do anything. However, if you still pay by cheque please submit your membership payment immediately.

You can download a form at our website or contact our administrator:  
[www.britishandrology.org.uk/membership.html](http://www.britishandrology.org.uk/membership.html)

If you pay by cheque please send it to:

Dr Alireza Fazeli  
BAS Chairman  
Academic Unit of Reproductive & Developmental Medicine  
University of Sheffield  
Level 4, Jessop Wing  
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Sheffield  
S10 2SF

If you have any queries please contact our administrator at  
[secretary@britishandrology.org.uk](mailto:secretary@britishandrology.org.uk).

### Travel Grants



All BAS members are entitled to apply for a travel grant award to travel to national and international conferences.

If you would like to apply for a travel grant award please visit our website where you can download a travel grant form and return it to the Treasurer, Sheena Lewis ([s.e.lewis@qub.ac.uk](mailto:s.e.lewis@qub.ac.uk)). Your application will be considered at the next Steering Committee.

[www.britishandrology.org.uk/travel%20grants.html](http://www.britishandrology.org.uk/travel%20grants.html)

If you have any queries please do not hesitate to contact our administrator at:

[secretary@britishandrology.org.uk](mailto:secretary@britishandrology.org.uk).

## Meetings

**BAS Annual Conference**  
University of Birmingham  
Birmingham  
16-17 September 2011  
[www.bas2011.org.uk](http://www.bas2011.org.uk)

**The ESHRE / BAS Semen Analysis Course**  
Medical School, University of Birmingham  
12-15 September 2011  
(Places on course are limited)  
[www.bas2011.org.uk/page6.html](http://www.bas2011.org.uk/page6.html)

**Royal Microscopical Society Events:**  
[www.rms.org.uk/events/Forthcoming\\_Events](http://www.rms.org.uk/events/Forthcoming_Events)

**SRF Annual Conference**  
University of Sussex, Brighton  
11-13 July 2011  
[www.srf-reproduction.org/meetings/conf2011/registration.htm](http://www.srf-reproduction.org/meetings/conf2011/registration.htm)

**GEMINI Annual Meeting**  
Gijon, Spain  
29 Sep – 2 Oct 2011  
[www.cost-gemini.eu/meetingsgijon](http://www.cost-gemini.eu/meetingsgijon)

**International Network for Young Researchers Meeting**  
Edinburgh, UK  
29 – 1 October 2011

**2<sup>nd</sup> World Congress of Reproductive Biology**  
Cairns, Australia  
9-11 October 2011

**14<sup>th</sup> World Congress on Human Reproduction**  
Melbourne, Australia  
30 Nov – 3 Dec 2011  
[www.humanreproduction2011.com](http://www.humanreproduction2011.com)

**14<sup>th</sup> World Congress on Human Reproduction**  
Melbourne, Australia  
30 Nov – 3 Dec 2011  
[www.humanreproduction2011.com](http://www.humanreproduction2011.com)

**European Microscopy Congress 2012**  
Manchester, UK  
16-21 September 2012  
[www.emc2012.org.uk/](http://www.emc2012.org.uk/)

## BAS – Call for New Committee Members

The British Andrology Society are seeking nominations for a new Chairman, Secretary and Treasurer for their Steering Committee.

If you would like to nominate someone for any of the posts please send an email to [secretary@britishandrology.org.uk](mailto:secretary@britishandrology.org.uk) who will collate all nominations received.

Nominations will be discussed at the AGM in October in Birmingham.



### Membership

If a colleague would like to join the BAS please contact the BAS Secretary Jacqui Piner at:

Email:  
[secretary@britishandrology.org.uk](mailto:secretary@britishandrology.org.uk)

### Steering Committee

*Chairman*  
*Treasurer*  
*Secretary*  
*Young Researcher Rep*  
*Member*  
*Member*  
*Member*  
*Member*  
*Member*

**Dr Alireza Fazeli**  
**Prof Sheena Lewis**  
**Dr Jacqui Piner**  
**Dr Najmeh Moeinvaziri**  
**Dr Iwan Lewis-Jones**  
**Prof Bill Holt**  
**Prof Jackson Kirkman-Brown**  
**Dr David Miller**  
**Dr Asif Muneer**

University of Sheffield  
Queen's University Belfast  
GlaxoSmithKline  
University of Sheffield  
Liverpool Women's Hospital  
Institute of Zoology  
University of Birmingham  
University of Leeds  
University College London