

# Women in Physiology



# Preface

The idea for this booklet came from a desire to have a handy source of inspirational biographies and stories from female physiologists. To feature them in a booklet would be extremely useful when mentoring or undertaking outreach and public engagement activities. A booklet would also fulfil the more subversive goal of saying: look at all this talent, all these contributions from women – let's celebrate them and not overlook them. Working in collaboration with Chrissy Stokes from The Physiological Society office we gained the support of The Society and its Policy Committee. We planned to have the booklet published for distribution at IUPS 2013 in Birmingham, so turnaround times were tight.

We knew everything was going to be fine when the positive responses to our invitation letters immediately started rolling in. It was very clear that our contributors also thought this was a good

idea, even when they were modest about what their own contribution might be. They were asked to provide some informal biographical details and to share some insights, highs and lows from their careers. I hope you will agree that they have shared generously with us to make an engaging and highly readable booklet. You will find women at all career stages, from Fellows to Vice Chancellors. There are women who have had career breaks and families, and women who are single. There are also women who have used their degree outside of academe, and those who have come to the UK to fulfil their desire for a career in physiology.

We aim for this booklet to be just the start. Other projects will be added and we are already looking forward to 2015 when The Society will celebrate the 100th anniversary of women being admitted as members. Send us your suggestions and become part of the project.

**Susan Wray and Chrissy Stokes.**

July 2013

# *Introduction*

## *Females, physiology and the booklet*

This booklet has been prepared for distribution at IUPS, 2013. Its focus is UK based but we hope it will be a useful exemplar for physiologists worldwide to take on similar but culturally relevant projects.

I'm not going to cite the statistics that underscore the leaky pathway of women in science – you already know them. Physiological science is no exception; it is a discipline in which there are fewer women making it through the ranks than seems reasonable or sensible. The lamentations and autopsies continue. With the reinvigoration of the Athena SWAN project throughout UK universities, it may be that a turning point has been reached and that a root and branch review of policies, practices and outcomes will inextricably lead to significant and irreversible change. Athena SWAN is a national charter recognising commitment to women's career development in science, engineering and technology (SET) subject areas (<http://www.athenaswan.org.uk/>). The boost has come from the financial driver of the National Institute for Health

Research (NIHR) issuing a letter from the Chief Medical Officer, Professor Dame Sally Davies, indicating that NIHR would only expect to shortlist medical schools for biomedical research centre and unit funding if the school holds a Silver Athena SWAN award. Money may speak louder than previous words.

As a group leader, one time head of department and mentor, I was aware of how all the bad news about succeeding in science was contributing to the problem of early career stage female scientists departing the fold. There is a need to accentuate the positive and different career routes. Of course the analysis of how tough and competitive the world out there is, is needed for informed consent ahead of engaging in the fray. And an examination and identification of any structural barriers and unfair processes is needed, to help demolish them. Early career physiologists need to know the landscape and receive our advice and encouragement. For female physiologists or schoolgirls in particular, however, where were the good news stories? Where were the role models? Where were →

## *Females, physiology and the booklet* continued..

➔ the faces of success? A second recurring theme I was aware of was the view that there had to be a straight arrow pathway, and only one pathway to success, particularly if you wanted to combine a career in academe with a family. When did it become “the law” that you must wait until you had a lectureship before having children and, with or without children, nothing should get in the way of obtaining the lectureship before you were “past it”? Just look at the profiles in this booklet to see how many successful law breakers there are! You will find entries from women who started in one career and changed to physiology and, vice versa, women who had career breaks, women who smashed any real or imagined glass

ceilings, women who just got on with things and upon quiet reflection have to admit they are doing rather well. In to all lives some rain will fall and arrows will warp if you will. Some of the arrows may look straighter than others initially, but read and learn, dream and act. You are the one best placed to decide on the when and how to do this. Write your own page.

We are extremely grateful to The Physiological Society for generously underwriting this project and lending their good name to it. The history of The Society and female physiologists is addressed below.

**Susan Wray**

## *An historical perspective of women in The Society*

The Physiological Society was founded in 1876 to promote physiology and support physiologists in the wake of the 1875 Royal Commission and resultant animal legislation. Members of The Society would discuss business over dinner; indeed one of the rules of The Society stated that 'the meetings of the Society shall commence with dinner at six o'clock punctually'. Dinner would be preceded by talks and, in 1884, Marion Greenwood published a communication, although there is no evidence that she attended the meeting herself. Whilst there was no explicit limitation by sex, the first record of a woman at a Society meeting was Florence Buchanan's attendance in 1896, although she did not join the men for dinner.

In 1913, John Scott Haldane proposed that women should be admitted as members of The Society and, in the following year, a postal ballot of members showed that of 161 members that voted, 94 supported the motion. In 1915, at the next AGM, the admission of women was 'approved by a majority' and the following was added to The Society rules:

'Rule 36. Women shall be eligible for membership of The Society and have the same rights, duties and privileges as men.'

At the first chance, 6 months after this amendment, six women were elected. If they were in alphabetical order for election, Florence Buchanan would be the first female member (the others being Winifred C. Cullis, Ruth C. Skelton, Sarah C. M. Sowton, Constance Leetham Terry and Enid M. Tribe ). Florence Buchanan would later become the first

author to publish in the Quarterly Journal of Experimental Physiology, which became Experimental Physiology in 1990. Winifred Cullis also became the first woman on the Committee and the first to host a Society meeting; she was also the first woman to become Professor of Physiology and Head of Department.

Women have continued to undertake careers in physiology since that amendment was made and in 2012, 264 new female members joined The Society. At the time this perspective went to press (July, 2013) there were 1173 female members which, as a percentage, was 36% of the total membership.

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### References

Tansey, E M (1993) "To dine with ladies smelling of dog"? A brief history of women and the Physiological Society. In *Women Physiologists*, eds L Bindman, A Brading & T Tansey, Portland Press, pp 3-17

**Chrissy Stokes**

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### A message from The Physiological Society

"The Physiological Society is delighted to present this booklet, which celebrates women working in physiology. The booklet is a prelude for our celebrations that will take place in 2015, which marks 100 years of women in The Society"

**Prof Mary Morrell,**

Chair of Policy Committee, The Physiological Society"

# Frances Ashcroft

*Ordinary Member of The Society 1983*



*With niece, Alexandra*

I am driven by curiosity and fascinated by ion channels. Since setting up my own lab, I have focused on KATP channels and their role in insulin secretion. Science was always exciting but I was rejected many times before I got a permanent job. I am fortunate to have had many marvellous collaborators, most of them male. Together, our work has helped people with neonatal diabetes, a very rare disease, switch from insulin injections to oral drug therapy.

I started as a naturalist with a passion for wild orchids but ended up in biophysics. Although I have no children, I have 6 wonderful nephews and nieces, one of whom is considering a career in physiology. Lack of children has given me time to learn to sail, fly and write books. Starting a book is always an excitement - finishing is a major challenge!

1974

● BA Cambridge University

1978

● PhD Cambridge University

1979

● MRC postdoctoral fellow with Peter Stanfield, Leicester University

1981

● MDA postdoctoral fellow UCLA

1982

● Departmental Demonstrator, University of Oxford

1985

● Royal Society University Research Fellow, Oxford

1990

● Lecturer in Physiology, Oxford

1996

● Professor of Physiology, Oxford

1999

● Elected Fellow of the Royal Society and of the Academy of Medical Sciences

2000

● Elected Member of EMBO

2001

● Royal Society Research Professor Oxford

2004

● European Laureate, L'Oréal-UNESCO Women in Science Award

2012

● Croonian Lecture, The Royal Society

2013

● Appointed Honorary Member of The Physiological Society

● Published a graduate textbook, *Ion Channels and Disease* (Academic Press)

● Published *Life at the Extremes, the science of survival* (Harper Collins)

● Charter medal, Institute of Biology

● Published *The Spark of Life- electricity in the human body* (Penguin Books)

# Julia Buckingham

*Ordinary Member of The Society 1980*



Science was my second choice – I really wanted to be a musician – but reading Zoology at University awoke a passion for Endocrinology and the rest is history! The relationship between the brain, the pituitary gland and the stress hormones of the adrenal cortex has intrigued me for years –there is still so much we don't understand about this critical life maintaining system.

I got married as soon as I completed my PhD – my husband was setting up his own accountancy practice and London offered the best opportunities for both of us. I have never had a career plan, just followed my instincts and desire to do research, to teach and to contribute to the broader academic community – people have been hugely important – my husband (an absolute tower of strength), supportive colleagues and the many wonderful students and postdocs who have passed through my lab.



- 
- Graduated, University of Sheffield
  - Started PhD, Royal Free Hospital School of Medicine
  - Completed PhD (Oct) and married (Nov)
  - Post doc and hon lecturer Physiology at the Royal Free
  - Senior Lecturer in Pharmacology and first MRC grant
  - First PhD student completed
  - Appointed to the Chair of Pharmacology and Head of Department of Pharmacology, Charing Cross and Westminster Medical School
  - Charing Cross and Westminster Medical School merged into Imperial College, became Head, Department of Neuroendocrinology. Awarded Wellcome Trust Programme Grant!
  - Appointed College Dean for non-clinical medicine
  - Programme grant renewed!
  - Appointed Head, Division of Neuroscience and Mental Health at Imperial
  - President, British Pharmacological Society
  - Appointed Pro-Rector (Education and Academic Affairs) at Imperial
  - President, Society for Endocrinology
  - Awarded British Pharmacological Society AstraZeneca Women in Pharmacology Prize
  - Appointed Vice-Chancellor and Principal, Brunel University
  - Awarded an honorary degree from the University of Sheffield
  - Awarded the Society for Endocrinology Medal
  - Awarded the British Pharmacological Society Gaddum Memorial Prize
  - Awarded BBSRC programme grant to establish a Centre for Integrative Mammalian Physiology and Pharmacology at Imperial
  - Became Editor of the Journal of Neuroendocrinology!
  - Appointed Chairman, SCORE
  - Appointed Pre-clinical Dean at Charing Cross and Westminster Medical School
  - Joined Glaxo as a research assistant!

# *Geraldine Clough*

*Ordinary Member of The Society 1981*

My route to a personal Chair in Vascular Physiology in the Faculty of Medicine, University of Southampton was via a BSc and PhD at University College London, Research Fellowship in Oxford and Lectureship at Imperial College London. It also included a career pause for two children, a return to research supported by a Wellcome Trust Re-entry Fellowship, and part-time working for a short while. My career-long research passion has been the microcirculation and its capacity to influence cardiovascular disease risk. I have studied in collaboration with a multidisciplinary team of biologists, bioengineers and clinicians in human cohorts and in animal models, using a range of in vivo and ex vivo approaches. I would not have achieved all of this without the support and encouragement of my academic mentors and an action learning set of like-minded women from across the University of Southampton.



● Biophysical properties of the capillary wall

1970

● Mentor - Laurence Smaje

1976

● Imperial College London (St. Mary's HMS) New Blood Lecturer in Physiology

● University College  
London BSc, PhD

1977

● Mentor - Charles Michel

● University of Oxford  
Departmental Demonstrator  
Florey Research Fellow

1983

● University of Southampton

1984

● Son #1

● Wellcome Trust Re-Entry Fellowship

1989

● Son #2

1991

● Wellcome Trust University Fellowship

● Career Break

1995

● Senior Lecturer

● The microvasculature in inflammation and allergy

1999

● Mentor - Martin Church

2000

● Reader

● Priming of microvascular health and disease

2004

● Peer support - Action Learning Sets

2007

● Personal Chair

# Shamshad Cockcroft

*Ordinary Member of The Society 1989*



During my PhD, I was introduced to inositol lipids as a potential source of second messengers. I was able to pursue this work as a postdoctoral fellow at a time when the concept of lipids as having roles in signalling had very little support from the scientific community. Looking back, the '80s was a very exciting period, as the second messengers derived from these lipids were discovered. Many questions remain as to how signalling lipids are transported within the cells and my current research focusses on a family of proteins that can move these lipids.

My school education was disrupted after the revolution in Zanzibar and I arrived in the UK with four 'O' levels (Maths, English, British Constitution and Geography). No one in my family had been to University, but after reading about William Harvey and Marie Curie aged 14, I decided I wanted a career in scientific research. I was incredibly fortunate that despite my lack of 'O' levels in the sciences, a grammar school allowed me to do my 'A' levels, and, after my studies, I moved to University College London. This was a demanding period combining research with three children, but we were fortunate to have a nanny who lived with us for 23 years.

● Revolution in Zanzibar

● Arrived in the UK aged 18 from Zanzibar with no 'O' or 'A' levels in any science subject

● Obtained 'A' levels in Physics, Chemistry and Maths and obtained a place to study Biological Chemistry at Manchester University

● PhD from Birmingham University and also married Laurence Cockcroft

● Postdoctoral fellow at University College London

● Birth of my daughter, Jasmine

● Birth of my son, Jacob

● Awarded a fellowship from the Lister Institute of Preventative Medicine

● Lectureship in the Physiology Dept at UCL and birth of my son, Joshua

● Readership at UCL

● Chair in Cell Physiology at UCL

● Awarded a Programme grant from the Wellcome Trust

1964

1970

1971

1977

1980

1982

1985

1989

1992

1994

# Kay Davies

*Ordinary Member of The Society 2011*

I never had a plan but I had a PhD supervisor who was quietly ambitious for me and a very supportive husband. Initially, succeeding in research was not enough to get me a lectureship but establishing myself in my chosen field before becoming involved in teaching and administration was very helpful. I did not have tenure until my forties. Participating in genetics has always been team work both nationally and internationally which placed me in a good position for leadership positions and now mentoring.



After a first degree in chemistry I was able to switch to biology for my PhD and then genetics. Meeting Duchenne muscular dystrophy patients and realising that we might be able to make a difference was a great motivation. Muscle disease remains my passion and I am determined to find a treatment for this terrible disease before I retire (which may not be anytime soon!).

1980

- With Bob Williamson, London, and Peter Harper, Cardiff

- Moved from London to Oxford. Worked in Weatherall Institute of Molecular Medicine where many scientists were working at the basic science/clinical interface

1988

- My team discovered utrophin

- Developed the first prenatal test for DMD

1989

- Director of MRC Clinical Sciences Centre, London

- Nicholas was born. Became more organised so that I could be at home by 5.30pm for family.

1994

- CBE for services to science

- Elected as Professor of Genetics at Oxford

1995

- Elected as Dr Lee's Professor of Anatomy, Head of Department

- Began thinking of therapy for DMD

1996

- Founding fellow of Academy of Medical Sciences

- Commuting to London with a small child was hard but the politics of medical science when London medical schools were being closed was even harder

1998

- Set up MRC Functional Genetics Unit

1999

- Elected Fellow Royal Society

- Had a very supportive department

2003

- DBE for services to science

- Surprised at how non-sexist the Royal Society is

2008

- Governor of the Wellcome Trust

2011

- Stepped down from leadership in Department

- Able to do more science and mentoring

# *Katharine Dibb*

*Ordinary Member of The Society 2000*

Although it was by chance I joined a lab studying heart function I developed a passion for this research. I loved working on cellular physiology of the heart and, more recently, how this translates to whole heart. I am interested in the atria and the influence of age/disease. Since the girls were born I have less time for late night experimenting but spend time managing research and writing.



*With daughter, Holly*

After my PhD I moved to Manchester with no real plan, just a desire to learn patch clamping! It was here I met my husband Andy and following a University Fellowship (a real boost in the battle for external fellowships) and a failed attempt (MRC) I was awarded a BHF Intermediate Fellowship then a University Lectureship. I am lucky as a great child-minder means I can focus on work during the day and both Andy and David Eisner are very supportive.



1997

- BSc Zoology, University of Liverpool

1998

- Job in industry

2002

- PhD, University of Leeds

- Moved to Manchester as a Post doc, loved it and stayed

2005

- Stepping Stone Fellowship

2006

- First Project Grant awarded as PI

- Married Andy

2008

- First invited talk

2009

- British Heart Foundation Intermediate Fellowship

2010

- Lectureship

- Moved house to the Peak District – Jess born 2 days later but thankfully just before we were snowed in!

2012

2013

- First editorial board appointment

- Holly born, Jess starts pre school and our time table is a little more hectic!

# Maria Fitzgerald

*Ordinary Member of The Society 1981*



I chanced upon the area of pain. My mentor, Patrick Wall, advised me to 'find a new field, and make it your own'. So I did, unravelling the developmental plasticity of pain circuitry in the infant spinal cord and cortex. I hope that I have made some difference.

<http://thinkneuroscience.wordpress.com/2013/02/06/paediatric-pain/>

All my family were in the arts and I think, as a teenager, I just wanted to be different. Physiology sounded such fun – and I was right, it is. I wrote my own job description for one of Maggie Thatcher's new blood lectureships and everything took off. My family mean everything to me but I think that my career has genuinely made me a better mother. I feel privileged to work in an environment with such intelligent colleagues who keep me on my toes. Until my daughter was about six, she thought that all scientists were women.

1981

- First MRC project grant

- Lectureship, UCL

- First big paper (Nature)

1982

- Readership, UCL, first paper on human infants (Lancet)

1984

- Chair in Developmental Neurobiology, UCL

1987

- First MRC programme grant (a huge boost to have long term funding)

1988

- Fellow, Academy of Medical Sciences, World Congress of Pain plenary lecturer

1992

- Tom born

- Sophie born

- Alfie born

- Wellcome Trust funded research sabbatical - especially important at this stage of my career, as my children were growing up.

1993

2000

- Promotion to higher grade Chair

2002

2002

- Jeffrey Lawson Award for Advocacy in Children's Pain Relief, American Pain Society

2007

2010

- Finally got a proper pay rise

2012

2013

- Planning to be a late bloomer, like my mother, whose biography, by Hermione Lee is published this year. <http://www.latebloomer.com/penelope-fitzgerald>

● Married John Lake, academic mathematician, later to become an investment banker (but I didn't know that at the time....)

# Abby Forwden

*Ordinary Member of The Society 1987*



*With husband, Michael Carpenter*

I have spent my entire career at the University of Cambridge, arriving as an undergraduate in 1972. On graduation, I decided that I wanted to be an academic and accepted a PhD studentship in the Department of Physiology at Cambridge. Before completing my PhD, I was offered a temporary demonstratorship in the Department and from there I worked my way up the career ladder via lectureship and readership to a personal Chair.

There are few careers with as much independence and intellectual stimulation as academia and teaching bright, lively students is a privilege.

I became fascinated by fetal physiology during my final undergraduate year and have worked in that area ever since. In particular, my research focuses on the factors controlling physiological development of the fetus. It takes a comparative approach using both in vivo and in vitro techniques to establish the physiological mechanisms by which environmental conditions program intrauterine development.

1975

● Graduated and started PhD in Dept. of Physiology, University of Cambridge

● First paper published

1977

● First woman on teaching staff of department

● Appointed to lectureship in Dept. of Physiology

1980

● Sabbatical leave in USA and Australia

● 25th peer reviewed original paper published

● Married Michael, PhD student in Dept. of Earth Sciences, Cambridge, followed by postdoctoral positions at Harvard, University of Arizona, Phoenix, and ETH, Zurich.

1985

● Sabbatical leave in Australia

● Appointed to Readership in Dept. of Physiology

1990

● Moved into a new animal research facility

● Michael appointed to lectureship in Dept. of Earth Sciences, Cambridge (whoopee finally two jobs in one place but then I leave for USA!)

1993

● Sabbatical leave in Australia

● 100th peer reviewed original paper published

1997

● Awarded ScD degree

● Acacia born and dies of brittle bone disease

2000

● Awarded personal Chair in Dept. of Physiology

● Rory born – no brittle bones!

● Asha born – no brittle bones!

2008

● Acting Head of Dept. of Physiology

● Helen, the children's nanny, arrives and stays for 12 years with her own 2 children eventually

2010

● Joan Mott prize, Physiological Society

● Michael awarded ScD and personal Chair

2012

● Acting Head of Department, PDN

● Married 30 years

2013

● McCance Lecturer, Neonatal Society

● Rory leaves for University

● 200th peer reviewed original paper published

● Asha leaves for University.

● Both children graduate

# Valerie Gladwell

*Ordinary Member of The Society 2003*

My PhD was in the labs of John Coote, studying cardiovascular control during and recovery from exercise. At the University of Essex, I am now exploring the psychophysiological effects of "green exercise" and the impact of physical activity/inactivity within the workplace and its impact on health. I am passionate about women in science, outreach activities and knowledge exchange.

I undertook a PhD, as it allowed me to combine my sport with further studies. It was the best decision of my life, as I met my future husband (he just finished his PhD with my supervisor, John Coote). I still didn't have a clear career plan but landed a Lectureship in Sports Science at the University of Essex just prior to completion of my PhD. I have been at Essex ever since. I gained my first major grant, when I was 37 weeks pregnant. Since then I have had 2 more children.



1995

- Biomedical Science degree, University of Birmingham

1997

- Scientific Researcher Glaxo-Wellcome, Stevenage, Hertfordshire, year out in industry

2000

- Graduated from Biomedical Science degree, University of Birmingham

2003

- Completed PhD, John Coote labs, University of Birmingham

2005

- Started first lectureship, Sport and Exercise Science, University of Essex

2008

- Council member of The Physiological Society (4 years)

2009

- Physiological Society Education Committee member (5 years)

2010

- ESRC Research Fellow (3 years). Research only! Part-time

2012

- Promotion to Senior Lecturer in Sport and Exercise Science, University of Essex

2013

- Awarded a BHF PhD studentship

- Returned to my role of teaching and research, part-time

- Went part-time after birth of 2nd son

- Birth of first son

- Birth of daughter - number 3!

- Helped to set up The Physiological Society's mentoring scheme

- Developed physiology exhibit for Big Bang Science Fair, now exhibited throughout the country

- Helped develop and was one of the science experts for Wellcome Trust Olympic project: In the Zone

- Course lead for Sport and Exercise Science degree at University of Essex

- Elected to University of Essex Senate

# Judy Harris

*Ordinary Member of The Society 1978*

I started as a fledgling neuroscientist, working on spinal motor mechanisms as a PhD student and then postdoc at UCL, before migrating down the M4 to Bristol, and up the spinal cord to the cerebellum. I was always fortunate to work in great research groups. More latterly my focus has turned to teaching, students and educational development, which I also thoroughly enjoy and find extremely rewarding. I was lucky to be able to change my focus at a mid-point in my career – a decision I haven't regretted.



*With daughter, Claire*

I've always been fascinated by how the body works and sharing that interest with others, so academia was a natural career choice. My husband has been extremely supportive, which has been vital to me. I worked part-time when our children were young and again when our son sadly died. Juggling careers and family life isn't straightforward but the rewards are well worth the effort – I now need to re-discover some hobbies before retiring!



1974

- Moved to Bristol for lectureship

1979

- PhD at UCL

- Married Reg

- Chris born

1982

- Claire born

- Chris died

1993

- Awarded joint Wellcome Trust Programme Grant  
Promoted to Senior Lecturer

- Went part-time

1994

- Started part-time voluntary work for children's cancer charity

1995

- Opted to stop bench research and focus on teaching

- Returned to work full-time

1999

- Appointed Head of Teaching in Physiology  
Appointed Deputy Head of Department

- Claire leaves for Oxford University

2000

- Claire graduates and starts legal training in London

2004

- Director, HEFCE-funded AIMS CETL  
Promoted to Chair in physiology education

- Claire qualifies as a solicitor

2008

- Reg semi-retires and becomes a domestic god!

2009

- Awarded University Teaching Fellowship  
Deputy Chair Physoc Education Committee  
Elected to Physoc Council

2013

- My mother celebrates her 90th birthday

# *Kristine Krug*

*Ordinary Member of The Society 2001*

I want to find out how the brain gives rise to our experience of and interaction with the world around us. In my lab, we record from, image, stimulate and trace brain circuits in the primate that directly contribute to simple decisions about what we see. The appearance of visual objects is not simply a function of the combination of different visual properties; my research interests centre on how context, like reward, affects brain circuits and decisions.



*With daughter, Maja  
and son, Jonathan*

A lab with a door that can be locked from the inside is what I still hope for. But science involves a lot of politics and PR these days. To survive the daily jungle, one needs a thick skin, good mentors, the ability to say no, a great partner, and a passion for science.

1994

● BA Physiological Sciences, Oxford University

1998

● DPhil Neuroscience, Oxford University

1999

● Max-Planck Postdoctoral Scholar, MPI, Tübingen

2001

● Prize Fellow at Magdalen College, Oxford University

2002

● Royal Society Dorothy Hodgkin Fellowship, Oxford University

● Found the right man

2003

● Junior Research Fellow, Oriel College, Oxford University

2004

● BA Mediafellow at the BBC

● Maja born

2005

● Royal Society University Research Fellow, Oxford University

2007

● Research Council funder tells me PIs don't have maternity leave

● Jonathan born

2008

● New grants, new lab

2010

● Involved in setting up a Freeschool with bilingual education

2011

● Tutorial Fellow in Biomedical Sciences, Oriel College, Oxford University

# *Bridget Lumb*

*Ordinary Member of  
The Society 1990*



I discovered a passion for science and the wonder of working at its cutting edge when I embarked on my undergraduate research project. Imagine the excitement of being able to ask, and hopefully answer, questions for the first time. That's why I'm a huge supporter of student projects - and there must be many others who share this experience. Since the original experience my research has continued to focus on the neural mechanisms of acute and chronic pain.

Not what I expected at the start of my journey. I thought it was all about being at the laboratory bench - after all, I'm a scientist! An academic career is what you make it. It is multifaceted and you can explore all sorts of avenues that are intellectually stimulating and make the best use of your skills. Currently, together with my collaborators, I run a large research group and am Head of School. Along the way I've taken on diverse management and scientific roles; first as a single woman, latterly with the essential support of my partner, John.

1982

- PhD, University of Birmingham

1990

- Research positions - Birmingham Leeds, Bristol

1991

- Lectureship, University of Bristol

1995

- First research grant!

2000

- Moved to paradise, aka Gloucestershire where I met John

2001

- Senior Lectureship

2002

- Awarded a credit in the Royal Horticultural Society's general certificate!

2004

- Married John and acquired a step-daughter Hannah

2006

- Meetings Secretary of The Physiological Society

2007

- Reader

2008

- Director of Bristol Neuroscience

2012

- Professor

- Head of School, Physiology & Pharmacology, University of Bristol

- Became step-granny to Hannah's son Harry

# *Mandy MacLean*

*Ordinary Member of The Society 1997*



For the last twenty years my research has focused on the pharmacological changes that occur in pulmonary arteries affected by pulmonary hypertension, focussing especially on the role of serotonin. I am currently focussing my research into why this disease occurs four-fold more frequently in women. I am examining the interactions between gender, oestrogens and serotonin to identify novel drugs for this devastating disease.

I am driven by a passion for pharmacology and have always let that direct my career. Had my two wonderful children in my thirties after returning from my first postdoc (like a salmon, I headed home back to Scotland!). For most of their lives I brought them up on my own, I owe so much of my success both as a mother and scientist to the fantastic support of my child-minder who is now the God-mother to Katy. Very keen and active in public engagement in science.

# 1974

- Scottish Intermediate champion in hurdles and long jump. Injury stopped that one in its tracks!

# 1982

- Ross born (1990)-employed Pam as childminder

- Katy born (1994)-Pam still childminding and Katy's Godmother!

- Ross starts secondary school

- Katy starts secondary school and after 16 years, Pam stops child minding!

- Katy goes to Dundee University to study Neuroscience/pharmacology (its nature not nurture!!)

- PhD in Cardiovascular Pharmacology, Edinburgh University

- Postdoc University of Florida

- Postdoc University of Cambridge

- Wellcome Trust Postdoc Fellowship University of Glasgow

- Lecturership University of Glasgow

- Reader, University of Glasgow

- Personal Professorship. University of Glasgow

- Start up Glasgow's Cafe Scientifique (still going in 2013!)

- Vice President (meetings) British Pharmacological Society

- Grover award for research awarded by the American Thoracic Society

- Deputy Chair for BBSRC Committee A

- Fellow of Society of Biology

- Received MBE for Services to Science and public engagement activities

- Awarded a Royal Society Wolfson Research Merit award

- Dean of Graduate Studies University of Glasgow

- Elected Fellow of the Royal Society of Edinburgh

- Royal Society Leverhulme Trust Senior Research Fellowship

- British Pharmacological Society AstraZeneca prize for women in pharmacology

- I become a step-granny!

# 1986

# 1990

# 1994

# 1997

# 2000

# 2004

# 2007

# 2009

# 2010

# 2011

# 2013

# *Karen McCloskey*

*Ordinary Member of The Society 2002*

I picked up the research bug during my undergraduate honours research project. Didn't know it at the time, but also met my future husband, Scott, an intercalated medical student in the laboratory. Was awarded a scholarship for PhD research in QUB and worked on lower urinary tract smooth muscle. Married Scott and the fun and challenge of supporting each other's careers stayed with us ever since, including the arrival of our 2 children. Am grateful for excellent childcare support from my in-laws. Still working on the urinary tract and have been inspired by supportive senior scientists including the late physiologist, Prof Alison Brading.

I've learned that the demands of academic life are far outweighed by the rewards of a loving and supportive family.





● BMedSc, Queen's University Belfast (QUB)

1994

● Commenced PhD (QUB)

● PhD in Physiology on same day as Scott graduated in Medicine

1996

● Postdoc in QUB until 2000

● Study visit to University of Nevada, Reno

● Got engaged to Scott

1997

● Research Fellow in Centre for Biophotonics, University of Strathclyde, Glasgow. Commuted to Belfast every weekend

● Married Scott

1998

● Obtained New Investigator Award from BBSRC, Action Medical Research grant. First postdoc and PhD student. Another study visit to Nevada

● Scott now an SHO in Glasgow. End of weekend commute

1999

2000

● Returned to part-time work in Glasgow and the weekly commute. First invitation to speak at an international meeting

● Weekend commuting again as Scott commenced 5 year Specialist Registrar position in Belfast after obtaining Member of Royal College of Physicians examinations

2001

2002

● Successful Wellcome Trust University Award, now Senior Lecturer and Wellcome Fellow in QUB. Family together again

● Birth of Hannah. Spent maternity leave in Belfast and wrote a Wellcome Trust University Award Fellowship

2003

2004

2005

● Developed group with grants from EU-FP7, Action Medical Research and BBSRC-Pfizer CASE award

● Birth of Joel

2006

● Promoted to Reader

● Scott graduated with PhD and Fellow of Royal College of Pathologists, appointed as hospital consultant

2010

2007

2011

2012

● Led successful bid for Athena SWAN Silver award for School of Medicine, Dentistry and Biomedical Sciences in QUB

# Mary Morrell

*Ordinary Member of The Society 1997*



I became Professor of Sleep and Respiratory Physiology at Imperial College London in 2010 having received my PhD in Physiology from London University, and previously been a Nurse at St Mary's Hospital, Paddington. Following a Fellowship at the University of Wisconsin-Madison, I returned to the UK where I set-up the Unit of Sleep and Breathing with clinical colleagues at the Royal Brompton Hospital. The aim of the unit is to investigate the causes and consequences of sleep-related breathing disorders; translating research into improvements in patient care. My current research focuses on the neurological impact of sleep apnoea; particularly in older people. Things I heard along the way that helped: 'Expected the unexpected' – during my PhD, 'speak-up' – in the USA, 'focus: decide what you want to be known for' – on return from USA, 'be comfortable with what you see in the mirror' – when it all goes pear-shaped.

“You have brains in your head. You have feet in your shoes. You can steer yourself any direction you choose. You're on your own. And you know what you know. And YOU are the one who'll decide where to go...”

“You'll get mixed up, of course, as you already know.....So be sure when you step. Step with care and great tact and remember that Life's a Great Balancing Act. Just never forget to be dexterous and deft. And never mix up your right foot with your left.”

Best Reference: Dr Seuss,  
Oh the Places You'll Go!

1986

- General Registered Nurse

1990

- BSc(Hons)

1994

- PhD and Wellcome Trust Travelling Fellowship...off to the States

1996

- Return to the UK, moved to Royal Brompton Hospital Campus at Imperial College London

1997

- Awarded a Wellcome Trust Career Development Fellowship and set-up Sleep and Breathing Group

1998

- Wellcome Trust Senior Fellowship rejected – monthly contracts

2001

- Wellcome Trust University Award

2000

- NIHR / HTA 1.5 million programme grant

2008

2010

- Professor of Sleep and Respiratory Physiology

# *Fiona Randall*

*Affiliate of The Society 2007*



I never dreamt of being a scientist – the perception of science wasn't cool. Honestly, a path of chance brought me into neuroscience – unplanned but lucky. I now work for Eisai Ltd., a Japanese pharmaceutical company, developing medicines for neurodegenerative diseases like Alzheimer's – I love that my work is interesting and has the potential to improve people's lives. My career is really just getting going and has taken me across the world – since finishing my PhD I've lived in Japan, China and the UK. Working in different cultural environments made me more adaptable and open to new and different ideas. I learned the languages, embraced the cultures and tried some terrifying foods!

I've always liked to be able to link the bigger picture to the nitty gritty details. In my job I study how electrical activity in the brain is different in disease and test if potential medicines can rescue this. I am also actively involved in promoting science as a career and communicating science to more general audiences.

2000

- University of Edinburgh BSc Molecular Biology
- Year in Industry Merck Sharp and Dohme – Alzheimer's Drug Discovery
- PhD in Neuroscience Newcastle University

2003

- STEMNET Science Ambassador for Schools
- Affiliate Representative for Physiological Society

2004

- Member of Editorial Board for Physiology Magazine
- School Speaker for Understanding Animal Research

2005

- Led seminars for undergraduate Biology and Medical students
- Postdoctoral Researcher, OIST, Okinawa Japan

2008

- 2nd place in the Brain Zone in I'm a Scientist, Get Me Out of Here web competition for UK schools in 2010

2010

- Japan Correspondent for Physiology News Magazine
- Scientist, GSK Shanghai, China

2012

- Senior Principal Researcher, Eisai Ltd, UK

# Daniela Riccardi

*Ordinary Member of  
The Society 1998*

*With her collaborators and  
the lab mascot, Wrex*



I wanted to become a scientist on Jacques Cousteau's "Calypso". Instead, in 1990 I enrolled on a PhD in Physiology at the University of Milan to study water transport in epithelia. During this time, I felt the urge to "go molecular". Thus, I attended a meeting in Woods Hole (paid out of my own pocket), with the intention to meet Steven Hebert and organise a six month visit to his lab in Boston. It was 20 years ago – my mother is still waiting for me to return to Italy.

I went to Boston at an exciting time. The group had just cloned the first G protein-coupled receptor that has an ion, calcium, as its physiological agonist. This, I believe, is one of the most exciting discoveries of the last 20 years. Ever since, I have worked, with undiminished enthusiasm, on the role of this receptor in the kidney-bone-vascular axis.

1993

- Moved to the Harvard, worked with Steven Hebert and Ed Brown on the cloning of the extracellular calcium-sensing receptor

1994

- PhD awarded. Kidney calcium-sensing receptor cloned. National Kidney Foundation Research fellowship Award

1996

- First Prize, Excellence in Research, American Society of Nephrology and National Kidney Foundation

1997

- Lectureship in Manchester

1999

- John Haddad Young Investigator Award, American Society for Bone and Mineral Research

2000

- The Wellcome Trust Prize for Excellence in Physiology Award

2001

- Met, and married within a year, former "wild child"

2004

- Moved to Cardiff as a Reader as part of a "husband-and-wife" team

2011

- Deputy Head, Pathophysiology and Repair & Physiology Programme Director

2012

- Promoted to Chair

2013

- Bought 1/3 yacht share (no, not the "Calypso")

# Louise Robson

*Ordinary Member of The Society 1996*



I became hooked on research doing a summer research project, and won a scholarship to complete a PhD in the same lab! As well as doing research I was able to get teaching experience (all types and levels including exams) and this helped me get my lectureship. Working hard in all areas (research, teaching, admin and schools work) got me my promotion, and also opened up new avenues where I have been able to impact nationally and internationally. I couldn't have done all this without a supportive partner and children, and of course being incredibly organised!

I am fascinated by ion channels and the role they play in epithelial cells. I have worked mainly on the kidney, but since 2006 have been working on cystic fibrosis. My research focuses on basic science, but I also help with the diagnosis of patients and testing possible new treatments.



1989

- Graduated with my BSc(Hons) in Physiology

- Started my PhD having been awarded the Emma and Leslie Reed PhD Scholarship

- Submitted my PhD and started postdoctoral research

- Appointed at Sheffield to a junior lectureship

- Started doing outreach work

- Awarded the Biller prize for excellence in epithelial research and teaching

- Lectured to schoolchildren at the Royal institution for the first time

- One of the first Science and Engineering Ambassadors in the UK

- Promoted to senior lecturer

- Became Chair of the Education and Outreach Committee at the Physiological Society, member of the Executive Committee and Council

- Awarded a University of Sheffield Senate Award for sustained excellence in learning and teaching

- Became a reviewing editor for the Journal of Physiology

- My term on the Education and Outreach Committee finished

- Started back lecturing at the Royal Institution

1990

- Got married to Richard and started gaining teaching experience

1992

- Jacqueline (1st child) born

1995

- Oswald (2nd child) born (almost a millennium baby)

1996

2001

2002

2003

2005

2008

2009

2010

2012

2013

- Celebrated our 23rd wedding anniversary and our eldest is off to university

# Nancy Rothwell

*Ordinary Member of The Society 1982*



After giving up biology at 14, I studied physiology (Plan B) in London and learnt to play darts, table football and serve in a bar. I was inspired by my PhD supervisor Mike Stock and we made some exciting discoveries on brown fat and obesity during and after my PhD.

A Royal Society fellowship allowed me to return to the North, and stop travelling to see my partner Paul, who I met at aged 16 at art college (failed Plan A). A serendipitous discovery and great colleagues led me to change fields to work on stroke and inflammation. An MRC Research professorship was won partly because I said it let me avoid major administrative jobs—another failure. Becoming vice chancellor of the University of Manchester was never in my plans. But I'm still a physiologist and active scientist and I am proud to have supervised over 50 PhD students.

1975

● BSc

1978

● PhD

1982

● Chair

● Royal Society fellowships from 1982-1991...god bless the Royal Society

● FRS

1987

● Moved to Manchester

● DBE

1998

● Chair

2004

● Royal Institution Lectures - most fun and hardest work

● Board member of AstraZeneca

2005

● Lots of national roles including Councils of MRC, CRUK, NESTA, BBSRC, RAE panel, RDS, NC3Rs, Wellcome

● Council and Vice President Royal Society

2006

● Inaugural president Society of Biology

2008

● President and Vice Chancellor University of Manchester

2009

2010

2012

● Co-Chair Prime Minister's Council for Science and Technology

# *Soraya Shirazi-Beechey*

*Ordinary Member of The Society 1994*



I have been fortunate to be educated in three continents.

After completing high school in Iran, I studied at the University of Michigan, USA where I earned my Bachelor of Science. I carried out my PhD at London University whilst having a young son. Being determined to establish myself as an independent scientist, I worked for nine years as an unpaid honorary lecturer when my success and presence were not totally appreciated by some of my fellow academics. At the end of this period I was awarded a Wellcome Trust Senior Lectureship. I subsequently moved to Liverpool, where I have a very successful research group.

I am passionate about my research, and I have seen it growing so wonderfully like my own child. From my initial interest in studying mechanisms underlying regulation of intestinal nutrient transport, my work led to the first identification of intestinal nutrient sensing and its role in gut-brain communication. In my research I have used an integrative and a comparative approach.

1975

● My son  
Khosro  
was born

1976

● Khosro starts  
at nursery

● Khosro starts primary school in Kent

● Khosro attending primary school in Wales,  
where he also studied Welsh

● Launch of Association of Women in Science and  
Technology (AWISE) with Dr. Joan Mason; Secretary of AWISE  
(1994-2004)

● My son graduated from University, subsequently got a job in the  
City (London). He now has a lovely little boy born on 23 June 2013.

● Completed my PhD and moved to Kent where my husband worked

● Postdoctoral fellow at the University of Kent in Canterbury, working in the field of microbial physiology

● Moved to University of Wales, Aberystwyth to follow my husband who got a University appointment there

● Personal award, National Kidney Research Fund Fellowship, returning to work in the area of intestinal  
nutrient transport

1979

● Full time unpaid honorary Lecturer University of Wales Aberystwyth

● Organised the Biochemical Society colloquium on "The Role of Women in Science" at  
Imperial College London. The audience consisted of academics and administrators as well  
as members of both Houses. Many answers to questions provided the basis for the  
White paper "The Rising Tide"

1980

1983

● Personal award of Wellcome Trust Senior Lectureship held at the University of  
Wales, Aberystwyth 1994-1997 and at the University of Liverpool 1997-  
1999

1985

● Promoted to readership

1994

● Vice Chair of Wellcome Trust International Committee

1999

● Promoted to a personal Chair in Molecular Physiology and  
Biochemistry

2001

● Honorary Professorial Fellow, Rowett Institute of  
Nutrition and Health

2005

2007

● Marbocyl achievement award for the work on the  
identification of the intestinal glucose sensor

2010

● Award of Honorary Associateship of Royal  
College of Veterinary Surgeons

# Chrissy Stokes

*Physiological Society staff member*



After studying for an undergraduate physiology degree in 1999, I stayed on at Bristol University to complete a PhD. After deciding that lab work wasn't for me, I gained my first 'real job' in 2003, as an Editorial Assistant at BioMed Central where I supported the launch of independent, Open Access journals. In 2005, I moved to the Wellcome Trust as a Science Programme Officer – awarding and administering physiology grants – and have been with The Physiological Society since I joined in 2007: first as Head of Education and Membership and latterly as Head of Education, Outreach and Policy.

I married my husband, Edward, in snowy December 2010 and we had our son, Alex, in October 2011. With the help of a very supportive husband, I returned to work after 9 months. I now work 4 days per week and am enjoying the challenge of juggling family and work.

*With husband, Edward  
and son, Alexander*

1999

● 2:1 BSc Hons in Physiology, Bristol University

2003

● PhD in Physiology, Bristol University

2004

● Assistant Editor, BioMed Central

2005

● Science Programme Officer, The Wellcome Trust

2007

● Head of Education and Membership, The Physiological Society

2010

● Married Edward

2011

● Head of Education, Outreach and Policy, The Physiological Society

2011

● Alexander Drake born

2012

● Return to work, part-time

# Joanne Storey (nee Pardoe)

*Ordinary Member of  
The Society 2000*



*With her daughters*

The areas of focus for the Office of Animal Welfare, Ethics and Strategy at GSK are: enhancing quality of science through animal model review; investing in innovation by expanding the 3Rs remit; implementing standards and systems to maximise investment in Drug Discovery data and sharing best practices and advancements externally.

Balancing a career and two children (I'm currently on maternity leave) means that life is never quiet but I wouldn't have it any other way! My juggling skills have faced a steep learning curve and I have lists for both work and home – it's the only way to cope with sleep deprivation.

There are still days when I miss the lab (there is something special about recording single units!) but the multitude of scientific techniques and therapeutic areas I work within maintains my appetite. I am currently involved in building a robust internal community for those involved in animal research at GSK, this crosses efficacy, transgenics and safety studies.



1998

- BA (Hons) Oxford University

- PhD University of Bristol

- Medical Research Council post-doc

2001

- Senior Scientist, GSK  
Set-up and established in vivo electrophysiology lab for drug discovery in psychiatric disorders.

2004

- Jim joins GSK; little did we know at this point he was to be my future husband

2007

- Promoted to Principal Scientist

2008

- Promoted to Investigator

2010

- Strategic changes at GSK – I interview successfully and get promoted to European Training Lead (Managerial level)

- First daughter is born

2011

- Marry Jim

2012

- Office of Animal Welfare, Ethics and Strategy is formed

- Second daughter is born

# Susan Wray

*Ordinary Member of  
The Society 1984*



*With her Mother, Edna, daughter,  
Emily and Grandson, Leo*

I was fortunate after my PhD to be part of a great team with physicists and clinicians in the early days of biomedical NMR and NIR spectroscopy, and have always enjoyed the appliance of science. Smooth muscle research into signalling and contractility and going from cells to human is my passion and the uterus my favourite tissue. I still hope to do big things in the field.

I never had a plan – PhD supervisor chosen as the one I thought would be kindest. Despite succeeding at research, I couldn't get a lectureship (I'll tell you my thoughts over a drink). Then the joy of having a supportive partner; to keep me sane we moved to jobs up north with the 3 children, and never looked back. I enjoy mentoring as I realise I've picked up some life skills – I just wish I'd realised at the time.

# 1979

- Last experiment completed for thesis, Emily born that evening!

# 1983

- Married for second time

# 1985

- Tom born

# 1988

- Mark born, moved to Liverpool for lectureship

# 1990

- Moved in temporarily with my parents, still there!

# 1991

- Promoted to SL

# 1993

- Promoted to reader

# 1996

- Awarded Chair

# 2002

- Got MRC programme grant

- Fellow, Academy of Medical Sciences

- Head of department

# 2004

- Joan Mott Prize Lecturer

# 2006

- Fellow, RCOG ad enumen

# 2008

- Elected MAE

# 2009

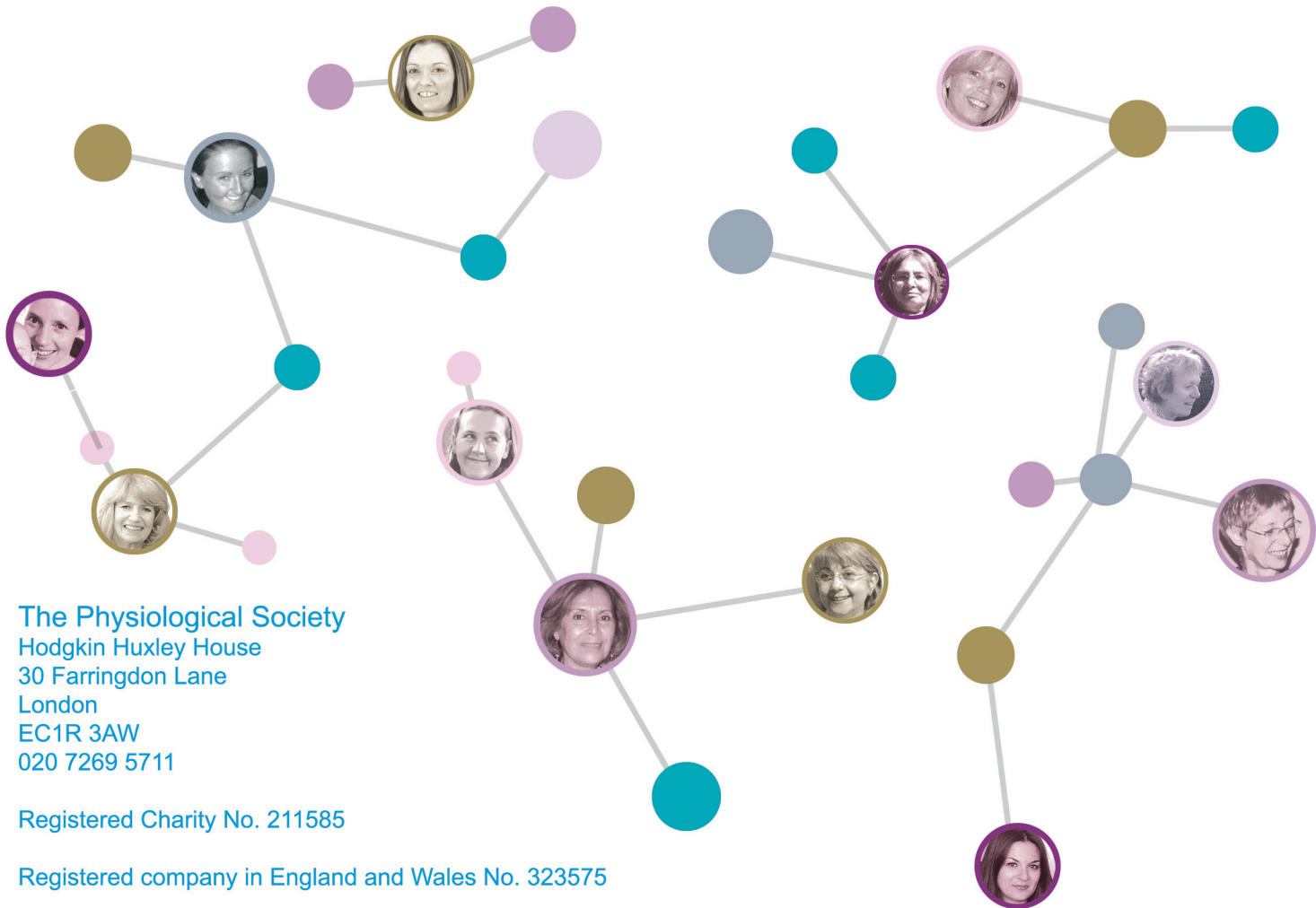
- Start fund raising for Centre for Better Births  
Editor-in-Chief, Physiological Reports

# 2012

- Moving to new labs, Centre for better Births

# 2013

- Our 30th wedding anniversary, parents 60th!



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