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Wellbeing of Women
Researcher

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Research News 2010

This year Wellbeing of Women received a record number of applications from doctors applying to undertake research projects.

All research proposals are carefully assessed by the joint Wellbeing of Women / Royal College of Obstetricians and Gynaecologists' Research Advisory Committee. Trust and Research news looks into their selection procedures on p.3

The trusts team have been approaching Yorkshire-based trusts and foundations to raise money for research into the causes of womb cancer. Relatively little is known about the causes of this disease, though new 'lipidomics' technology offers a promising opportunity for research. See p.1-2

Charity no. 239281

Wellbeing of Women talked to Dr. Orsi to find out about his motivations, his team, and research project in Leeds

Right: Dr. Orsi, Researching the causes of womb cancer for Wellbeing of Women



How did you feel when your project was awarded a Project Grant from Wellbeing of Women – worth £250,000?

Over the moon – and beyond! As a team, this meant that we finally had the wherewithal to start a research programme that would greatly improve our understanding of the mechanisms underlying womb cancer. To me, this is incredibly exciting because we will be breaking new ground in biology, medicine, chemistry and mathematics all in the same project!

What made you want to become a clinician?

I originally trained as a research scientist, and specialised in reproductive health after completing my PhD. Although this gave me an excellent grounding in science, I felt that I missed much of the clinical context my research was focussing on. My occasional contact with patients involved in various studies made me realise the magnitude of the human element involved, and so I decided to train further as a clinician in order to have a more balanced view of my research in line with patients' needs.

Why did you choose to specialise in women's reproductive health?

I have always been fascinated by reproduction. I remain absolutely amazed by its complexity – in fact, it's remarkable by virtue of the simple fact that it works at all! I have always been interested how hormones and other signalling molecules work in concert to regulate physiology, and the womb provides more than enough scope for research in this area that will keep me off the streets for many more years to come.

How did the idea for your project 'The role of eicosanoids in womb cancer' evolve?

My previous research has looked into the role played by eicosanoids (fat-like signalling molecules) in normal womb function, particularly in relation to the establishment of pregnancy. Certain eicosanoids are involved in regulating the menstrual cycle, uterine immune function, healthy pregnancy and the onset of labour. My view has always been that studying individual eicosanoids gives us only a limited and very biased understanding of the complex mechanisms involved. This is the case in cancer, where much research has focused on just one kind of eicosanoid molecule, whose levels are raised in cancer tissues. With the advent of the new "lipidomics" technology which we plan to use, it is now possible to measure many types of eicosanoids in the same sample. The data generated from such analysis is incredibly complex and requires the development of new mathematical tools ("systems biology") in order for us to understand how these molecules interact to promote cancer development. My previous collaborative work with both lipidomics chemists and mathematicians placed me in a unique position to apply these new approaches to womb (or indeed any) cancer.

Are eicosanoids found anywhere outside the womb tissue? Does this mean your findings could have implications on our understanding of other forms of cancer?

Eicosanoids are found throughout the body and have roles in regulating many functions, such as inflammation and immunity.

(Continued overleaf)

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They are responsible for numerous conditions, ranging from simple headaches to heart disease and arthritis. It is known that certain eicosanoids play a role in the development of many cancers, not just those of the womb. As we will be looking at many different eicosanoids and how they interact to promote womb cancer, our findings are likely to have a major impact on our understanding of their involvement in other cancers too.

We still don't know what causes womb cancer. Is it because the area is under researched?

We do know about some of the risk factors for the commonest form of womb cancer, such as polycystic ovary syndrome, late menopause and never having had children. Although we know that these factors lead to "unopposed estrogen" which can lead to benign overgrowth of the lining of the womb and then sometimes to cancer, the details of this progression are still very sketchy. Certainly, research into womb cancer has lagged far behind that of more "high profile" cancers, such as that of the breast, due to a relative lack of funding. I find this frustrating since womb cancer remains the commonest gynaecological cancer, accounting for over 1,700 deaths a year in the UK alone. We need greater research investment into the mechanisms leading to womb cancer as this will allow us to develop better treatments for women suffering from this terrible disease.

In what direction do you think cancer research is heading?

To use an analogy, if you imagine living cells as incredibly complex machines, research to date has led to great leaps in our understanding of which parts of the machine become faulty when cells become cancerous.

This has led to the development of "targeted" therapies: drugs designed to zero in on these faulty components in order to kill cancer cells. Although there have been notable successes, many of these drugs have not fulfilled their initial promise. This, I believe, is in part due to our overly simplistic understanding of the cell machinery, where we consider a particular faulty component in isolation rather than how it interacts with other components and in the cell as a whole. Increasingly, cancer researchers will be seeking to understand how these different components of the cell machinery work together, how cancer cells interact with other types of cells within body tissues, and how the presence of early stage cancer may affect the whole body, even before the patient has developed any symptoms. This relatively young field of research is known as "systems biology" and involves collaboration between clinicians, biologists, mathematicians and computer scientists. It is no trivial task to address the complexities involved, but I believe that this approach will be key to the development of more effective cancer therapies and better ways of detecting cancer early in the future.

In your opinion, will there ever be a cure for cancer?

This is a very difficult question to answer. First of all, cancer is not one disease but many. Although there are common themes across many types of cancer, there are also many differences between them, so a search for a single cure is probably unrealistic.

Cancers that are detected early are often easier to treat, whereas advanced cancers become good at evading different therapies. I hope that in the future, we will be able to screen populations for early markers of cancer (or even pre-cancer) and, equally importantly, be better able to predict which of these pre-cancers are likely to progress so that we don't needlessly treat those patients who have no indication that they are at risk of developing cancer. Coupled with the development of better drugs/treatment strategies tailored to specific cancers (and even specific patients), this should strengthen our position in the battle against cancer.

Where do you want to be professionally in 5 or 10 years' time, both in your research and career?

This is another very difficult question! In many ways, it depends largely on the successes we have as a team in making breakthroughs in our research. In a perfect world, I would like to remain in academia, balancing lab-based research with clinical pathology, as I believe that this would provide an optimal scientific:clinical balance. I cannot really see myself working in industry or private practice as neither appeal to me. I would very much like to be in a stronger position (maybe as a professor – who knows? That's what we all aspire to!) to further expand the team's research remit to include other under-researched gynaecological cancers such as ovarian teratomas.

Wellbeing of Women would like to thank charitable trusts and foundations for giving generously to Dr Orsi's research into the causes of womb cancer.


A generous donation from The Dowager Countess Eleanor Peel Trust gave an excellent start to our Leeds research and was gratefully received.

Based across the whole of St. James's University Hospital, Leeds, the team feel that it is essential to maintain a link with women for whom they are carrying out research into the causes of womb cancer. As Dr. Orsi says, 'Seeing the ordeal women with womb cancer go through is the best motivator for keeping the impetus of the research going strong'.



Dr. Orsi's team investigate the causes of womb cancer at Leeds Institute of Molecular Medicine

The amount of time the Leeds researchers spend in the lab varies, depending on what needs to be done. As a team they all do their bit, whether it be collecting samples, lab work, analysing data or writing up grants/manuscripts. Dr Orsi attempts to do as much lab work as possible, as it is the reason he trained as a scientist.



Inside the Research Advisory Committee

Committee of specialists meet to select training awards for hopeful young doctors Tuesday 4th May

The joint Wellbeing of Women and Royal College of Obstetricians and Gynaecologists' Research Advisory Committee (RAC) met at the beginning of May to discuss applications from talented medical students and graduates, hoping to be awarded Research Training Fellowships, Entry Level Scholarships and Student Elective Bursaries.

This year we received a total of 176 applications for our Training Awards. Our Entry Level Scholarships, worth £20,000, help newly qualified doctors to gain research experience and our Elective Bursaries give medical students the opportunity to broaden their experience by enabling them to develop their skills for up to 6 weeks in a different, often challenging, social and cultural environment.

A prestigious Research Training Fellowship for junior doctors can be for up to 3 years of research in basic science, obstetrics or gynaecology at a recognised UK research institution and may be worth as much as £175,000.

'The idea of Wellbeing of Women fellowships is to enable brilliant, newly qualified doctors to embark upon careers as academic clinicians, specialising in obstetrics and gynaecology' says Liz Campbell, Director of Wellbeing of Women. There is currently a worrying shortage of doctors entering this specialty. By awarding training scholarships, the charity is able to nurture the next generation of specialists working to improve women's health in labs, maternity wards, surgeries and hospitals across the UK.

The RAC discussed 21 high-calibre applications for Research Training Fellowships, and short-listed candidates will now be interviewed by the Wellbeing of Women panel. They awarded a record 29 Elective Bursaries.

Training Awards Selection Procedures

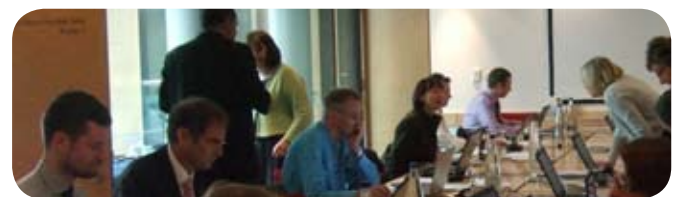
We are very proud of the reputation of our Research Advisory Committee, our partnership with the Royal College of Obstetricians and Gynaecologists (RCOG), and our peer review process. We feel that it is what makes us stand out as a medical research charity. Wellbeing of Women's Research Advisory Committee (RAC) is an independent panel of twenty-one experts, appointed with recommendations from the Royal College of Obstetricians and Gynaecologists, and by external experts. The RAC recommend the allocation of funds based on a robust peer review process, designed to ensure that high quality research projects are selected. All RAC members serve three-year terms.

They meet twice a year: in January to discuss awarding project grants and in May/June to discuss the training awards – Elective Bursaries for medical students and Entry Level Scholarships and Research Training Fellowships for graduate doctors. Research Training Fellowships are designed to encourage medical graduates to pursue a career in academic medicine. Wellbeing of Women hope they will be the talented researchers of the future, finding the solutions to women's health problems.

Each application for a Research Training Fellowship is peer reviewed by two members of our Research Advisory Committee and a minimum of three independent UK-based or international external assessors, chosen for their expertise in the area of research. They are asked to score the applications from 1 to 5 and comment on the research. Checks are built into our selection process to ensure that no reviewer has a conflict of interest.

When the Research Advisory Committee meet, all applications are scrutinised and judged upon their scientific excellence, potential for improving clinical practice, calibre of candidate and research institutions involved. Ethical issues are a key consideration too, as are value for money and expected benefits to patients.

They will also take into account the gaps in women's health care. To identify the areas of greatest need Wellbeing of Women seek the strategic view of the RCOG and consult the views of women. Our policy is to direct funding towards areas where the greatest improvements to women's health can be made in terms of diagnosis, prevention, treatment and cure. For example, research into gynaecological cancers is under funded when compared to other cancers, and it is difficult to attract funding for research into common conditions, such as female incontinence.



The Research Advisory Committee makes its recommendations for support to the Trustees of Wellbeing of Women, who then make the final decision as to which of the projects and training awards should be funded. Accountability is fundamental to our selection process and the Committee reviews its own process. We maintain a close relationship with all our researchers for the duration of their grant, and annual progress reports are submitted by grant holders to the Committee for review.

In 2006 the Wellbeing of Women Research Advisory Committee was awarded a 'Certificate of Best Practice' by the Association of Medical Research Charities (AMRC), in recognition of the integrity of its peer review procedures. Their adherence to exceptionally high standards has led to a partnership with the Wellcome Trust to award a Wellbeing of Women/Wellcome Trust Research Training Fellowship, as well as to collaborations with other medical research charities such as SANDS.

Inspiring the Specialists of Tomorrow

Young doctors funded to learn lessons in healthcare from abroad

Each year Wellbeing of Women awards grants of £1000 to medical students and midwives to enable them to undertake elective study periods anywhere in the world. Students with the best project proposals are given the opportunity to broaden their experience and skills by pursuing their own project into any aspect of obstetrics or gynaecology, baby health or midwifery.

This wonderful opportunity is offered to medical and midwifery students to encourage them to enter the speciality of Obs & Gynae, which in the UK currently has staff shortages. The selection process is extremely competitive, with just 29 out of 130 applicants being awarded bursaries in 2010.

With Wellbeing of Women's assistance, the students are able to develop knowledge of their subject in challenging, insightful and sometimes exotic locations.

Many students undertake studies in which the different healthcare practices, lifestyle factors or technologies and techniques found in other countries are compared to those of the UK, bringing the student insight into contrasting medical cultures. For example, one bursary student spent her time at Boston Children's Hospital to observe how surgery to treat a particular congenital heart defect in a fetus was more successful at this hospital than elsewhere in the world. Her report, which gives much hope for the future success of this surgery in the UK, was selected for a poster presentation at the Society of Cardio-Thoracic Surgeons Conference in Liverpool in March 2010.

Wellbeing of Women also awards bursaries to students eager to experience working within the limited resources and infrastructure of the health care systems in developing countries, where an 'extra pair of hands' on deck is always very welcome. While gaining invaluable interpersonal and life skills, students volunteering their services have an experience that could foster a passion for issues of international development and women's health overseas.

In what may be challenging conditions, students are encouraged to take on greater responsibility than may be possible in the UK. During their elective students might also be able to observe the high prevalence of particular health conditions such as HIV or malaria, or, complications arising from pregnancy or disease that are relatively uncommon in the UK.

Many of our donors are pleased to fund a bursary, seeing it as good value for money and having a long-term benefit. Despite this, Wellbeing of Women still receives more interesting and worthwhile applications for bursaries than they are currently able to fund. For many students it is a life-changing experience that inspires them to pursue a career in Obs and Gynae. For Wellbeing of Women, the bursaries enable the charity's reach to extend to women across the world – as participants give their time to work, learn and live in a new environment while making a difference.

Wellbeing of Women thank The Barbour Trust, Jean Ginsburg Memorial Foundation and Galvani Charitable Foundation for their long-term support of Student Elective Bursaries.



Family planning clinic Madagascar



Boston Children's Hospital neonatal unit



Midwifery student and nurses in Uganda

Charitable Trust and Foundations Messages of Thanks

Wellbeing of Women were delighted to receive the second instalment of a three-year grant from the Connie and Albert Taylor Trust supporting research into the role of thyroid hormones in pregnancy at Birmingham Women's Hospital.

Wellbeing of Women would like to thank all of its supporters for the generous and valuable contribution they make to its research - joining with us to improve the health of women and their babies.