



The Australian Society for Medical Research  
ASMR Medical Research Week® June 2010

## ASMR MEDALLIST 2010

BARONESS SUSAN GREENFIELD CBE

MEDIA RESOURCE

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## Questions and Answers:

**Q: Do you think it likely Alzheimer's Disease will be a manageable disease by 2020?**

*I don't think it's an all or none issue but whether a disease is manageable comes in different degrees. If so, then I certainly see Alzheimer's Disease becoming more manageable over the next decade. Great strides are being made towards understanding early diagnosis and management.*

**Q: What are the most important attributes a scientist can have?**

*Belief in one's own ideas but at the same time the flexibility to modify those ideas in the light of experimental data. Above all you have to have a passion for what you do and ideally a sense of humour for when things go pear shaped.*

**Q: Can you describe an ideal environment for science to flourish?**

*One where there's plenty of opportunity for lively debate and discussion and where you don't feel pressured to 'publish or perish'. In addition, it would be an environment where you don't spend a month, a year or more applying for grants where you only have a 10% chance of success.*

**Q: How do we encourage our young people to engage in the adventure of discovery when many may feel a career in science is beyond their capabilities?**

*As always when talking about careers in science, there are two important issues that are easy to say but difficult to execute. 1. Cultural shift. 2. Resources.*

*1. A cultural change is clearly required in particular for girls to understand what a career in science could offer and also to realise it doesn't mean you are in a lab for the rest of your life. Those with a scientific background are much needed in other sectors such as politics, media and law. As always with changes in culture one cannot control or regulate a shift in attitude. One should engage with the media as much as possible to provide maximum outreach where role models, new concepts and dispelling of prejudices can all get appropriate air time.*

*2. Resources, especially funds are needed to help those, especially women having had children, to stay in a career where tenure is only normally possible beyond the normal reproductive optimum, i.e. in one's mid-thirties.*

**Q: Do you think there will ever be a pill we can take which will make us smarter?**

*No! There have always been drugs that can increase alertness but any neuroactive substance will target chemicals in the brain which are widespread, not specific functions.*

**Q: Do you think we'll ever be able to use technology to help store our personal thoughts and memories, especially in regards to ageing and related diseases?**

*No. A personal thought or memory is just that. In that it is interdependent upon a nested hierarchy of other associations, thoughts and memories. You would have to download everything! Including all the emotions arising from an interaction between brain and body. Moreover, a personal thought or memory is highly subjective and modified every moment it's recalled. Personal thoughts and memories should not be equated as simple facts such as information stored on computers.*

**Q: What role should scientists take in shaping social policy?**

*Scientist should contribute to rather than shape social policy. As yet their voices have been underrepresented and it is important that they should be a part of all sectors that discuss how to shape society for the best.*

**Q: Is there an age at which the brain loses its plasticity and beyond this time certain lessons cannot be learnt? (eg if children don't learn certain lessons by a particular age, is this capability lost forever?)**

*The brain never loses its plasticity, otherwise if the brain stayed exactly the same, your consciousness would be the same from one moment to the next. As we get older we process information differently, whilst the young brain is unconditional but fast at absorbing anything that comes in. The old brain will be slower as it evaluates against the checks and balances of previous experiences.*

## Quotable Quotes From Baroness Greenfield:

*"[Imagine] a society where to talk about science is as natural as talking about football'.*

*"Academics talk about 'dumbing down' and think you can't grubby your hands in the real world. [However] it's more intellectually challenging to make salient, complex points sound simple."*

Re: young scientists - *"They feel they have to fight to survive in their careers, so they toe the line, rather than being challenging and brave."*

### **The Web**

*"The question I want to ask is not so much what can we do with the web, but rather what will it do to us."*

*"A novel is a narrative [with] a beginning, a middle and an end. It takes you through something. Whereas the Net, you pop into it, you pop out of it. There is no obvious narrative line."*

*"Children can learn lots of facts, but that doesn't make them very wise, or even intelligent. The whole trick is to relate one fact to another, then you have a theory or an idea. And that is what you should be trying to do, not just diet on a lot of facts."*

### **Computer Games**

*"The thrill is par excellence - you are pressing a button and having responses - but it is a very indirect, rather sanitised thrill. It's not like climbing a tree," she says. "The options are all laid before you; they are all numbered and clear, pre-programmed."*

*"It scares me in one way, and fascinates me in another, in wondering where it will take people. What impact does having a false identity have on your real identity?"*

*"Imagine a generation brought up on the same software, with the same images. Given that the brain will reflect very much what happens to you, is that going to standardise, therefore, individuals... a kind of standardised nurture?"*

*"I think what we need is a techno-savvy populace, who say now that we have this technology how can we use it, how can we make the most of it?"*

*"I wish women could be more assertive... My parents brought me up to fight my own corner, ask questions, be accountable for what I do and always speak my mind, which has got me into trouble. But above all, I believe the individual trumps everything and that is our marvelous birthright..."*

# Baroness Susan Greenfield CBE

## Current Positions:

- Professor of Pharmacology at the University of Oxford, where she leads a multi-disciplinary team investigating neurodegenerative disorders,
- Director of the Oxford Centre for the Science of the Mind, exploring the physical basis of consciousness,
- Director of the Institute for the Future of the Mind, part of the James Martin 21st Century School, which exploits the parallels between the brains of the very young and very old, and how they are all vulnerable to technology, chemical manipulation, and disease.

## Education & Career:

Born in London, Baroness Greenfield studied experimental psychology at St Hilda's College, Oxford. After receiving her DPhil in 1977, she undertook research at the University of Oxford, the Collège de France (Paris), and the New York University Medical Centre (New York) before being appointed a Junior Research Fellow at Green College, Oxford, in 1981. In 1985 she was elected a Fellow of Lincoln College, Oxford, and Lecturer in Synaptic Pharmacology, becoming Professor in 1996.

As a consequence of working in both biochemical and electrophysiological environments she has developed a **multidisciplinary approach** to exploring novel neuronal mechanisms in the brain that are common to regions affected in both Alzheimer's and Parkinson's disease. The basic theme of her research is to develop strategies to arrest neuronal death in these disorders. Baroness Greenfield was the Director of the Royal Institution of Great Britain 1998 - 2010 (the first woman to hold that position in its >200-year history).

## Selected Accolades:

- Awarded the Michael Faraday medal by the Royal Society (1998)
- Elected to an Honorary Fellowship of the Royal College of Physicians (1999)
- awarded the CBE in the Millennium New Year's Honors' List for contributions to the public understanding of science
- Honorary Fellowship of the Royal College of Physicians (2000)
- *The Observer* voted her Woman of the Year (2000)
- Created a non-political Life Peerage as **Baroness Greenfield**, of Ot Moor in the County of Oxfordshire (2001)
- Ordre National de la Legion d'Honneur (2003)
- Adelaide's Thinker in Residence for 2004 and 2005
- Installed as Chancellor of Heriot-Watt University (2006)
- Voted Honorary Australian of the Year (2006)
- Made a Fellow of the Royal Society of Edinburgh (2007)
- Included as one of the 50 most powerful women by the *Guardian* newspaper, and
- Ranked number 14 in the "50 Most Inspirational Women in the World" by *Harpers and Queen*

## Authored Books:

- "Journey to the Centers of the Mind: Toward a Science of Consciousness" (1995)
- "The Human Brain: A Guided Tour" (1997)
- "How we Work: Understanding the Human Body and Mind" (1997)
- "The Private Life of the Brain" (2002)
- "Tomorrow's People: How 21st Century Technology Is Changing the Way We Think and Feel" (2003)

- “Inside the Body: Fantastic Images from Beneath the Skin” (2004)
- “Would the Real Church Please Stand Up!” (2007)
- “‘ID’ - The Quest for Identity” (2008)

**Other Notables:**

- Created multiple companies from her research (eg Synaptica, BrainBoost, and Neurodiagnostics, which research neuronal diseases such as Alzheimer's disease).
- Headed a British Government taskforce to promote the recruitment of women into careers in science that resulted in the Greenfield report, ‘*SET Fair: A Report on Women in Science, Engineering, and Technology*’.
- Received 30 Honorary Degrees
- Advisor to the Social Issues Research Centre and is centrally involved with the development of a Code of Practice for science and health reporting.
- Patron of the Alzheimer's Research Trust.
- A Trustee of the Science Museum
- Founder and trustee of the charity Science for Humanity, a network of scientists, researchers and technologists that collaborates with non-profits to create practical solutions to the everyday problems of developing communities
- Invited to be the first woman to give the Royal Institution Christmas Lecture (1994)
- Presented public lectures as Gresham Professor of Physic (1995 to 1999), which entailed giving six public lectures a year in the City of London.
- Delivered a consultative seminar to the then Prime Minister, Tony Blair (1999), on the future of science in the UK.
- Probably also the first female scientist to have appeared in photo shoots for *Hello!* and *Vogue* and is known for her flamboyant dress sense.
- Described as “anything but beige” (Steve Jones).