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The Profile: Roger Short

CV

Roger Short, ScD, FRS Ed, FRCVS, FRCOG, FAAS, FAA, FRANZCOG, FRCP (Ed), FRS

1999: Co-author, Ever Since Adam and Eve: The Evolution of Human Sexuality

1996: Wexler Professorial Fellow, Department of Perinatal Medicine, Royal Women's Hospital, Melbourne

1982-1995: Personal Chair in Reproductive Biology, Monash University

1972-1982: Foundation Director, Medical Research Council's Unit of Reproductive Biology, Edinburgh

1972-1980: Co-editor, Reproduction in Mammals

1956-1972: On the scientific staff of the Agricultural Research Council's Unit of Reproductive Physiology and Biochemistry, Cambridge, and a lecturer and Reader at the University of Cambridge

SCIENCE, SEX AND AN AMAZING CABBAGE

Asked by a British customs official whether he had anything to declare, the young scientist replied, somewhat cockily, that there was an elephant in his suitcase. "Dead or alive, sir?" came the deadpan response. Within minutes, the official and Roger Short were deep in conversation about the wonders of embryology.

The suitcase had in fact contained an elephant uterus which contained a foetus the size of a thumbnail. Short had made the find on a trip to Kenya to gather material for research into elephants.

"I thought, this is the most precious thing I've ever seen, the most beautiful thing I have ever seen, and that I must take it back to Britain with me," Short recalls. He put the uterus in an enormous plastic bag filled with formalin and gave away all his clothes so there was room for it in his suitcase.

Almost forty years later, Short recounts the story with such enthusiasm and attention to detail that the listener feels like an eyewitness.

At 69, Short, one of the world's most famous reproductive biologists, is as busy as ever generating scientific papers, debate and headlines across an unusually diverse range of interests. English-born, he moved to a personal chair at Monash University in 1982, and has been based at the Royal Women's Hospital in Melbourne since 1996.

Colleagues and friends have endless tales about Short's exploits, a self-described "sexpert". There was the time he flew around the world with a thermometer up his bottom, setting off airport security systems, as part of his jetlag investigations of melatonin. (Short was the first to recognise its potential for preventing jetlag and co-holds international patents for its use in jetlag, shiftwork and sleep disorders).

Then there was the time he grabbed his testicles to make the point at a conference about the relationship between testicle size and promiscuity. The time that he gave a special carving as a farewell gift to a university administrator with whom there had been a difficult relationship. It was of an erect human penis.

The time he began to undress while addressing a conference on human reproduction. Underneath his shirt was a T-shirt saying, *Don't use Vatican condoms*. He turned to reveal what was written on the back. *They're holy!*

But no-one is quite so good at telling a story about Short as the man himself. A natural raconteur in great demand as a conference speaker, Short is skilled at engaging audiences - whether his peers, the public or students.

"He is inspiring, he is brave, he is awfully funny," says ABC science broadcaster and friend, Robyn Williams.

Short began his professional life as a vet, but suggests that clients were lucky he soon moved into full-time research. He tells, for the umpteenth time, the story about him spaying a cat.

Removing what seemed to be an ovary, Short was most excited to inform his boss that it appeared to be calcified and was surely worthy of a write-up in some journal or other. “That’s the patella, you bloody fool,” was the response.

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Short (who is aptly named) is fond of telling students that there are two sorts of scientists. The carrots who go deeper and deeper, getting narrower and narrower, and learning more and more about less and less. Cabbages, however, sit on the surface and spread their leaves and know a little about a lot.

But the cabbage description doesn’t quite do Short justice. He seems to know an awful lot about an awful lot. A quick scan of Medline reveals he has published on topics including - and this is just a tiny selection - safe sex education, the benefits of breast feeding, the contribution of the mule to scientific thought, and the male reproductive organs of the African elephant.

One of his most recent publishing efforts is a beautifully produced book, “Ever since Adam and Eve: The evolution of human sexuality”. Published earlier this yearand now one of Cambridge University Press’ best selling titles, it was written over many years with longstanding colleague and friend Malcolm Potts, a professor of population and family planning at the University of California, Berkeley.

Ask colleagues what Short’s greatest achievement has been, and their responses are as varied as his work, which has ranged from field studies of animals to laboratory and clinical research, and policy (he spent 1989 in Geneva as a consultant to the World Health Organisation’s Global Program on AIDS).

Some cite a series of textbooks, Reproduction in Mammals, first published in the 1970s, which has sold over 100,000 copies and been translated into many languages. Short was the co-editor and main contributor to the series.

Others proffer Short’s work in furthering understanding of the ovary, endocrinology and embryological development.

Ian Fraser, professor in reproductive medicine at the University of Sydney, says Short was probably the first to talk about the evolution of human reproduction, including the impact of women now having far more menstrual periods than in primitive societies.

Others cite Short's role as a teacher and mentor. "He's had a profound effect educationally on biology teaching around the world and stimulating generations of young people now with his love of biology - and I'm an example of that," says Shaun Brennecke, professor of obstetrics and gynaecology at Melbourne University. He "leapt" at the opportunity to have Short take up his current position after he retired from Monash.

Marijo Kent-First, a professor of obstetrics and gynaecology at the University of Wisconsin, is one of many leading reproductive scientists and clinicians around the world who also claim Short as a mentor and inspiration.

She met Short almost 20 years ago when studying an unusual herd of mares, which had XY chromosomes.

"Roger immediately asked me with great excitement and a twinkle in his eye had I bothered to evaluate the clitoris of these XY female horses," she recalls. "I was a little Southern girl who was pretty conservative and barely knew what a clitoris was at the time and especially not if it was attached to a horse, but I jolly well wanted to find out."

She and Short spent the next several days measuring and palpating horse clitori. "Since that time, I have palpated, photographed, and measured literally hundreds of horse clitori not to mention elephant, gazelle, cow , and even a tapir or two and everytime I do, I think of Roger," she says.

Kent-First adds that Short provided tremendous personal support when she was being sued over her discovery that the XY Sex Reversal Syndrome in horses could be transmitted through a carrier male. The first carrier male she discovered was a valuable Arabian stallion, and his owners were not happy with her finding suggesting that many of his female progeny would be infertile.

Short's role as a populariser of science is also widely cited as one of his major achievements. His enthusiasm and gift for story-telling are an ideal combination for the media, where sex, as perhaps everywhere, sells product.

Colleagues from years ago recall that Short made a conscious decision not to spend his life at the bench, but to be a generator of new ideas. "He hasn't travelled the standard academic path," adds Brennecke. "In contrast to a lot of colleagues who might have buried themselves in a laboratory and spent hours in a dark room writing grant applications, Roger has certainly made a broader stage for himself." He adds that more students would be choosing to study science, "if there were more Roger Shorts proclaiming the wonders of science to our students."

Short has come in for his share of criticism from colleagues over the years, which probably reflects both his high public profile and history of floating controversial ideas, which peers say have sometimes flopped.

But there seems widespread agreement that Short is nothing short of brilliant, with a flair for challenging dogma and bridging disciplines. "Roger is one of the most original thinkers that I've ever met, a hugely intelligent man and also an incredibly interesting man," says Professor John Aitken, head of biological sciences at the University of Newcastle, whose PhD was supervised by Short years ago.

Ian Fraser adds: "He is perceived as somebody who has an extraodinary mind, capable of making these associations that transcend boundaries and of stimulating others to pick up those ideas and to try and work with them."

Colleagues say Short has never been an empire builder, preferring to maintain intellectual freedom. When appointed as Foundation Director of the Medical Research Council's Unit of Reproductive Biology in Edinburgh, he said he would resign in 10 years' time. He did, even though he had not yet found another job.

Asked why he once turned down an offer to be chief scientist in the UK, Short replies: "I am not a very good administrator." Indeed, Short, who has only recently switched onto email, is not known for office organisational or grant-writing skills and his office, a tiny windowless room, is smothered by paper stacks.

You get the feeling that it is not always easy to live with someone who is widely described as living for his work. Marilyn Renfree, professor of zoology at Melbourne University, is an internationally respected expert on marsupial reproduction and a longstanding collaborator with Short.

Twenty years ago, she never would have guessed that she would end up marrying one of her scientific heroes. They married in 1982 and have two teenage daughters. Short had been married before and has four adult children in England.

" Work has a very high priority in Roger's life," says Renfree. "This has been sometimes difficult to explain to the children, especially when they were younger." She adds: "He's still one of my scientific heroes. He really is an amazing person."

Kent-First says Renfree is Short's anchor: "When Roger is talking science, the world could come crashing down around his ears and he would not realise it."

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In the 1940s, Short was at boarding school in England (sent there because of the war) when his mother came to visit. She was a farmer's daughter with no formal education who loved drama, and had often enlisted her young son in reading parts in plays.

They sat on a park bench and she asked of his plans for the future. Short said he had no idea, and she replied: "Well, I will tell you. You are going to be a vet, but you will never practise. You will do research." Short recalls that he "just said yes".

Her advice was not surprising considering that he had spent much of his childhood on a nearby river, sailing, swimming and studying fish. He was still a schoolboy when he published his first scientific paper, after tagging pike to see how far they migrated.

Short says he was also greatly influenced by advice that his father, an inventor, sent him anonymously (Short recognised the handwriting on the envelope). It was a typed quotation from a speech by American writer Ralph Waldo Emerson.

It urges graduating students to be in perpetual search of knowledge rather than fortune, to question dogma, and to “make yourself necessary to the world”.

Short still carries the letter, now faded and crinkled, in his wallet, and has shared it with many. “It’s as relevant today as when Emerson must have said it,” he says. “For somebody who is not really religious and who wanted a creed, it became my creed.”

Short says some of his career’s most exciting projects have occurred in the last year, including helping to run a sex education program for Chinese university students.

Another follows on from that early incident with the elephant embryo and reflects a lifetime’s fascination with elephants. Combining his studies of their embryological development and behaviour, Short recently co-authored a paper concluding that elephants are relatively recent descendants of marine mammals. Hence the trunk was once a snorkel and they communicate over great distances on the same frequency, unheard by the human ear, as whales.

“When you see how these things fit together and that it’s really evolution that gives you the clue, it makes evolution seem a fantastically exciting idea,” he says.

To grasp Short’s excitement over his other major recent publication, you must understand his longstanding interest in hybrids (many years ago he inseminated cats with lion sperm, to no avail) - and travel back to early January 1998.

The setting is Dubai, where Short has previously persuaded the Crown Prince of Dubai to fund an unusual research project. Short has dropped in on his way back home from Bermuda (he’s not known as the Qantas professor for nothing) to check on how a very special pregnancy is faring.

He is met with the news that Rama the Cama - a hybrid between a camel and a guanaco (a close relative of the llama) - has just been born. Sadly, the mother is showing no interest, and Short joins the roster of

researchers who sit with the animal day and night to feed him every two hours.

Rama is not simply a unique creature, the only one of his kind, thus far at least. Rama, whose mother was a guanaco, was born within the normal range of gestation and weight for that species, but grew rapidly after birth - baby camels are about six times bigger than llamas and have longer gestations. Short says this suggests that Rama's mother's genes overrode his father's to control birth and gestation.

You can be sure that Short's stories about Rama have since delighted many audiences. "He's the best person to have at a dinner party. He's absolutely riveting," says friend and admirer, Professor Alan Trounson, deputy director of the Monash Institute of Reproduction and Development.

"You wouldn't want to go through life and not have met Roger Short. You would have missed out on something special, very special."