



# Society for Reproduction and Fertility



## SRF MARSHALL MEDAL 2017

### Professor William V Holt

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I am currently a Visiting Professor at the University of Sheffield and an Honorary Research Associate of the Smithsonian Institution in Washington, DC. After obtaining my first degree in 1974 by passing the Institute of Biology membership exams, I obtained a PhD in 1979 through the Royal Veterinary College (London). I spent most of my professional life at the Zoological Society of London, where, after retiring in 2011, I became an Honorary Research Associate. In 2012 I was awarded the Setchell medal by the British Andrology Society.

In my research I have tried to combine studies of basic reproductive biology in various species, including many wild species, with some practical developments of reproductive technologies and their applications to wildlife conservation. Research in semen cryopreservation and semen assessment in both wild and agricultural species led me into many international collaborations; notably with Steve Johnston at the University of Queensland (Australia), where we attempted to solve the intractable problem of freezing wallaby, kangaroo and koala sperm. More recently I have collaborated with Fran Otero-Ferrer and Marisol Izquierdo at the University of Las Palmas, Gran Canaria, studying how the quality of paternal diet affects placental function and offspring survival in seahorses. (Seahorses are very unusual because the males not only produce sperm; they become pregnant as well!).

The seahorse work is an offshoot of research into the ways in which the peri-conception diet in mammals (both male and female) affects offspring development and their future wellbeing. This is an interest that developed through working with Professor Alireza Fazeli (formerly at the Zoological Society of London and now at the University of Sheffield). We realised, about 15 years ago, that sperm transport in mammals stimulates both *de novo* gene transcription and protein synthesis in the uterus and oviducts, thus indicating that spermatozoa are involved in establishing the appropriate milieu for future embryo development.

Since retiring in 2011, and without having to contend with the burden of administration, I have co-authored more than 40 scientific papers and have also planned and co-edited three books.