INTRODUCTION:

I am a Consultant Orthopaedic Surgeon and have been in independent practice since 1991. Although trained in the generality of orthopaedics, my interest from my appointment has been in disorders and joint conserving operations of the hip joint in children and young adults.

I worked in Birmingham as a trainee from 1981. I worked as a fellow in The Hospital for Sick Children in Toronto in 1989 and moved to Boston Children's Hospital the following year. I was a consultant orthopaedic surgeon at the Royal Orthopaedic Hospital, Birmingham until 2016, doing hip operations in children and a full range of trauma at the Birmingham Children's Hospital.

During my period at medical school, 1970-76, I was also trained in mechanical engineering and machined the parts to rebuild about 8 or ten engines from 1972 to 76. I developed, made and patented a technically successful electrostatic diesel exhaust gas particulate filter in 1975. This was 40 years ahead of its time and was commercially unsuccessful.

I was involved in the basic research relating to the Birmingham Hip Resurfacing (BHR) form 1985 onwards. The design was inspired by the disassembly of a 1957 Mercedes engine.

Shortcomings of the BHR™ evident in long-term follow-up (largely due to very poor instrumentation and poor component sizing) have been addressed successfully (as judged by UKNJR and Australian NJR outcomes) by my own design and the production (by Finsbury Orthopaedics) of the Adept™ resurfacing and its instruments in 2003/4. I was in receipt of royalties from Finsbury Orthopaedics in this connection until 2009. Recent data indicate that the failure rate of the Adept is about half that of the BHR after 17 years and is better than the industry-leading ceramic on XLPE THR

In 1988 and 1989 I published two papers in USA which showed that the commonest operation on childhood dislocated hips in UK (and other countries) was unnecessary, avoidable and biologically harmful. Unhelpful to my career prospects in the UK, they resulted in job offers in Toronto and Boston.

My MCh Thesis (awarded summe cum laude) was based on these two papers and some experimental work on rats in Toronto. This work was considered a landmark in children's hip surgeon's circles at the time and resulted in a sponsored travelling fellowship covering many important paediatric orthopaedic centres in North America. This work, which reported on over two hundred children's hips, also showed that the final anatomical shape of the previously dislocated hip was inversely related to the age at which good socket cover was achieved to mould the previously dislocated head into a perfect round shape. The younger this cover was achieved, the better the shape at maturity. It was of particular importance for social reasons to have all such surgery done before going to school.

While in Toronto, Andranik Khachaturian, (a grand-nephew of the composer, who came from Yerevan with a planeload of children injured in the earthquake some months earlier) and I

developed a technique to culture articular cartilage from iliac crest pluripotential stem cells. This was first used in rabbit and then human knee joints. This was further developed and commercialised when I moved to Boston. It is still the basis for such techniques today.

I have performed over 1700 pelvic osteotomies of my own design, the Birmingham Interlocking Pelvic osteotomy, BIPO; often in combination with femoral osteotomies.

BIPO has much better accuracy and reproducibility, as well as much better production engineering and instruments than its closest competitor, the (more popular) Ganz Bernese Periacetabular Osteotomy (PAO). The complication rate (BIPO 4% vs PAO c20%, 53 papers) and survivorship rate at 30 years (BIPO 50% vs PAO 28%); (in several surgeons' hands) is very much better than reported after PAO.

There are several other joint-preserving hip operations that I have developed. A list of publications, presentations, abstracts and invited lectures is available upon request or on Google Scholar or Medline.

I also have performed over four thousand hip arthroplasties, including hip replacements and hip resurfacings. These have including many hundreds of difficult, complicated primary hip arthroplasties (femoral shortening over a stem or using a plate below a resurfacing), in young patients, median age 28 years at operation.

I was the principal provider of services to patients who had avascular necrosis (AVN, death of bone due to loss of blood supply) of the femoral head in the Birmingham Area for about thirty years.

I hold several (13) extant patents pertaining to hip arthroplasty and some others - extinct - in the Automotive anti-pollution field.

Being a petrol head and a trauma surgeon, I was a member of the car safety design panel of a local manufacturer from 1991 to 96.

I am considered an expert on many aspects of conservative hip surgery, particularly pelvic and femoral osteotomy.

From 1989 to 2004, I assisted Prof R B Salter who ran the principal Instructional Course on Children's Hip Dysplasia at the American Academy of Orthopaedic Surgeons, until we handed it on to the next generation. This was equivalent to being exhibited alongside Picasso.

From 1989 to 2004, I assisted Mr MB Millis who ran the principal Instructional Course on Adult Hip Dysplasia at the American Academy of Orthopaedic Surgeons, until we handed it on to the next generation. Members of these panels set the syllabus and exam questions for the relevant parts of the US orthopaedic boards exams. I have been the presidential guest speaker on occasion on this subject at international meetings.

When the first Covid lockdown began in the spring of 2020, a colleague psychologist, Prof Tina Gambling of Cardiff University and I began writing a general interest book about disability suffered by young adults with hip problems. Tina had interviewed 700 of my patients about the social and psychological adverse effects of young adult hip disease. Most sadly Tina died after a five week illness in the autumn of that year and the book remains incomplete.

I review for a variety of journals, both in Europe and North America.