The 4th Utah-Florence Symposium on the Genetics of Male Infertility was held February 4-6 at the beautiful ski resort, The Canyons Resort, in Park City, Utah, USA. The program committee included Drs. Douglas Carrell, Csilla Krausz, Dolores Lamb, and Paolo Sassone-Corsi, and the symposium was attended by both experts and students in the fields of Andrology, Genetics and Urology, representing basic science research as well as clinical work. The symposium allows these parties to interact and exchange ideas and discuss relevant topics for the future of male infertility and the role genetics has in this area of study.

The program was divided into three general categories of subjects with sessions from early afternoon into the evening so participants could enjoy skiing and the surrounding area. The meeting started with basic science and general overview topics. Dr. M. Matzuk reviewed the genetics of male infertility in mammalian models with Dr. P. Morris discussing meiotic events in spermatogenesis. Drs. R. Oliva and P. Vogt gave brief overviews on sperm cell proteomics and control of the AZFa region. In addition, Drs. J. Parrington, C. Lau, K. Yokomori and L. Looijenga focused this session on gene therapy, cell proliferation, DNA repair mechanisms, and the molecular genetics of testicular cancer. Finally, Dr. J. Lupski spoke on copy number variation and complex genetic diseases, such as male infertility.

The second session covered the aspects of chromatin structure and epigenetics. Dr. P. Sossone-Corsi introduced the topics with a discussion of chromatoid body formation and spermatogenic-regulation via histone acetylation. Dr. S. Ward focused on the structure and function of the sperm nuclear matrix, with Dr. N. Hecht reviewing small RNA-protein interactions in male germ cells. Discussion of histone variants, gene poising by epigenetic modifications and diagnostic potential of human sperm RNAs rounded out the day with these topics presented by Drs. S. Khochbin, B. Cairns, and S. Krawetz.

An afternoon poster session was held and highlighted three ISA trainee’s travel award winners. Winners included Daniel DaJusta (University of Texas, Southwestern, USA), Marina Grigorova (University of Tartu, Estonia) and Sundararajan Venkatesh (All India Institute of Medical Sciences, India). The award winners also gave oral presentations during the conference. In addition, Gamete Analytics
sponsored five oral abstract awards, with the following trainees receiving awards for outstanding research in the field: Claudia Giachini (University of Florence, Italy), Sue Hammoud (University of Utah, USA), Graham Johnson (Wayne State University, USA), Deborah Lo Giacco (Fundacio Puigvert, Spain) and Alexander Yatsenko (Baylor College of Medicine, USA).

The keynote address and dinner was held on the mountain- the ride on the gondola well worth the trip as Dr. Ryuzo Yanagimachi gave a history of spermatogenesis and fertilization with his decades of experience and distinguished career in the field.

The final day of the symposium focused on the clinical science and medicine with Dr. M. Katz-Jaffe starting the day with a discussion of the view of sperm from the embryo’s perspective and ART. Dr. C. Somers intrigued the audience with the topic of air pollution and genetic damage to male germ cells. The vulnerability of human sperm to DNA damage by Dr. L. Bjorndahl and sperm chromatin packaging anomalies with relevance in the clinic by Dr. A. Zini complemented talks reviewing the origin of sperm aneuploidy and recombination errors by Dr. H. Tempest and Dr. C. Krausz’s review of multicopy genes on the Y chromosome and their relevance to spermatogenesis. Dr. D. Carrell discussed the genetic and epigenetic variation seen in the human genome, how it relates to the complexity of male infertility and what the current state-of-the-art proposes for the genetics of male infertility. Dr. B. Oates closed the topic with a summary of the clinical evaluation of the infertile male with respect to genetic etiologies.

It was announced that plans are for the next meeting to be held in Florence, Italy in the fall of 2012.

Douglas Carrell, PhD