



SSR Research Award (*sustaining support from Organon, NV*). Dr. Michael D. Griswold is the recipient of the 2006 SSR Research Award. Dr. Griswold began his research career as a student in biochemistry at the University of Wyoming, where he received his Ph.D. in 1969. He was an NIH postdoctoral fellow in the Department of Physiological Chemistry at the University of Wisconsin–Madison and spent a year in Rome, Italy, conducting postdoctoral studies in cell biology. He later held positions at Baylor College of Medicine and Best Institute at the University of Toronto. In 1976 Dr. Griswold joined the faculty at Washington State University in Pullman, where he has spent a long and

productive career studying male reproductive biology, particularly the function of Sertoli cells in spermatogenesis.

Dr. Griswold is a leader in the field of male reproduction, and his significant scientific contributions have enhanced our understanding of testicular somatic cell function and their influence on germinal cell differentiation and maturation. His ideas, approaches, and results have led to a better understanding of the Sertoli cell, provided improved animal models and methodology for the study of spermatogenesis, and precipitated new concepts in testis biology, contraception, and infertility. In the last 34 years, Dr. Griswold has published more than 180 papers in prominent journals. Within the last 6 years alone, he has contributed more than 40 peer-reviewed publications demonstrating a profoundly active research program. As a testimonial to the vitality of his scholarship, leadership, and collaborative philosophy, he has been invited to present lectures at over 57 meetings and colloquia during his career. The past few years have been immensely productive and characterized by innovative and ground-breaking research. Dr. Griswold has recently made major contributions to our understanding of the molecular biology of Sertoli cells and their interactions with germ cells, the regulation of gene expression in the testis, the dynamics of spermatogonial stem cells, and global patterns of gene expression.

Dr. Griswold has done pioneering work on the molecular and cellular aspects of Sertoli cell function. Two examples of his creativity are his development of the vitamin A-deficient rat model to synchronize spermatogenesis and thereby define more precisely the cellular interactions and associations that occur, and his discovery of sulfated glycoprotein-2 as one of the major proteins secreted by Sertoli cells to serve as a marker of Sertoli cell function. Dr. Griswold's research on the structural and functional characterization of the FSH receptor gene (his lab was the first to clone this gene) is tremendously important to our understanding of male reproductive function. This is another example of the cutting-edge research from Dr. Griswold's laboratory.

Dr. Griswold's more recent publications reveal his focus on insights derived from two extremely important technologies— spermatogonial stem cell transplantation and microarrays. It would be easy to say that his science has become “technology driven”

but this would belittle the insight and gutsiness that it took to go in these directions. Both methodologies are technologically intimidating, hard to establish, and expensive. Not many among us would have the courage to face the “down time” it takes to get either of these methodologies established in our labs, much less both! However, Dr. Griswold saw them as significant and essential for new knowledge about cell interactions in the testis.

Dr. Griswold has used spermatogonial stem cell transplantation assays to establish germ cell or somatic cell autonomy of important gene products, such as the androgen receptor, which he definitively showed was not required in germ cells. By transplanting testicular cells from androgen receptor (AR) deficient mice into seminiferous tubules of AR-positive azoospermic mice, he demonstrated that murine germ cells do not require AR to complete spermatogenesis (Johnston et al., 2001, *Endocrinology* 142:2405). This methodology is proving to be remarkably productive for determining the necessity of expression in the germ cell versus somatic cell compartments in testicular function, as more and more genes are being identified that are required for fertility. For example, see Buaas et al. (2004, *Nat Genet* 36:647), where it was shown that actions of the Plzf gene are required in germ cells in order to maintain stem cell renewal. Dr. Griswold has improved the methodology for culturing germ cells prior to transplantation, an important step for adapting this technology to gene therapy and production of transgenic animals.

Dr. Griswold's prompt adaptation of micorarray analysis to understanding hormonal regulation and gonadal development has led to the development of numerous data sets that provide a foundation for future research and serve as a valuable resource to the scientific community. These studies have also added greatly to our understanding of gene networks and pathways induced by androgens and FSH in the testis and those that accompany gonadal differentiation and development. His gene profiling studies using hypogonadal mice are thorough and insightful in vivo evaluations of FSH and androgen action in the testis, revealing the temporal changes in genetic pathways that follow hormone stimulation.

In addition to his research, Dr. Griswold contributes in many other ways to the scientific community. He has served continually on editorial boards and review panels, and has been an active member of the Society for the Study of Reproduction since 1981. In service to SSR, he has been a member of the Board of Directors (1989–92) and Program Committee (1992, 1995) and has served as Program Chair (1998), President-Elect (1997–98), President (1998–99), and Past- President (1999–2000). Dr. Griswold is an outstanding educator, having trained 29 M.S. and Ph.D. students as well as 21 research associates and postdoctoral fellows. His mentorship is to be admired, and the respect these students show him is to be envied. More important, many of his students have developed their own careers as respected scientists and educators.

The respect of his colleagues is readily apparent. During the last few years Dr. Griswold has served in leadership roles at Washington State as department chair, dean of the College of Sciences, and director of the School of Molecular Biosciences, and has received the Edward R. Meyer Professorship in Science.

Few scientists have had such an impact on the field of male reproductive biology as a visionary researcher, mentor, and administrator. Dr. Griswold's distinguished record of achievement provides ample evidence that he is highly deserving of the SSR Research Award.