

## AWARDS

**Carl G. Hartman Award.** (*Sponsored by R.W. Johnson Pharmaceutical Research Institute.*) Dr. Robert H. Foote is the recipient of the 2000 Carl G. Hartman Award.



Dr. Foote's education began long before he entered a graduate program at Cornell University. He went to a one-room school with eight grades and one teacher. There he learned a great deal about self-discipline. Lesson 2 was learned in World War II, when as a young army officer he served with a most

distinguished group of loyal, dedicated, sharing and caring Americans, the Nisei of the most highly decorated army unit in our history.

He completed his M.S. and Ph.D. degrees at Cornell with four concentrations: animal breeding, animal physiology, animal nutrition and biochemical genetics. The latter was an "add on," for the fun of trying to figure out how genes worked their magic. Of course this was a fortunate choice, for his research to improve the reproductive efficiency of genetically superior animals was driven both by its importance to animal agriculture, and the hope that someday molecular genetic tools would become available to explain how genes worked their magic. That day has arrived!

Dr. Foote's research on the requirements for preserving bull sperm at 5°C led to the procedures copied throughout the world by major artificial insemination organizations. The use of penicillin, streptomycin and polymyxin B to control transmission of agents causing venereal diseases was worth many billions of dollars to the dairy industry. His development of the Cornell University self-carbonating CUE extender resulted in the highest fertility rate ever reported for a large population of dairy cattle. Later the development of a triscitric acid-glucose-glycerol-egg yolk extender found worldwide use for frozen semen of many species.

With the mission accomplished of enabling artificial insemination of dairy cattle to be established on a sound technical and economically practical basis, Dr. Foote turned to fundamental processes of spermatogenesis. The rabbit was

chosen as an experimental model so that enough radioisotopes in the 1950s would be available to track spermatogenic cells, characterize them, and relate them to DNA synthesis, thus providing a fuller quantitative and qualitative understanding of spermatogenesis.

Simultaneously he developed improved techniques for rabbit superovulation and combined this with <sup>3</sup>Hthymidine studies of neonatal and adult females. These pioneering studies provided essentially incontrovertible evidence that no oocytogenesis occurred in growing rabbits, so the stock of oocytes in rabbits and all mammals appeared to undergo only storage and apoptosis throughout postnatal life.

The next major area of accomplishment of Dr. Foote's lab was the first development of a serum-free medium to culture one- and two-cell rabbit embryos into blastocysts. Eventually, this led to equivalent systems for culturing bovine zygotes.

The role of hormones in controlling sexual behavior was of fundamental interest, and also a practical one in artificial insemination. Dr. Foote undertook a series of studies with castrated male and female rabbits and cattle exposed to aromatizable and nonaromatizable androgens and estrogens; results indicated that estrogen was more powerful than androgens in controlling brain responses in males.

Reproductive failure was modeled in rabbits and applied to cattle to improve reproductive efficiency. The rabbit model led to isolation of the effects of pituitary hormones, progesterone, blood flow to the uterus, aging oocytes, and changes in uterine composition with aging, as causes or noncauses of reproductive failure. Dr. Foote was invited to serve on the first Study Section when the NIH Institute of Aging was established. However, he was too busy teaching, advising, and conducting research. Over a period of 35 years, Dr. Foote taught all of the 8,000 students at Cornell who took an undergraduate lecture and laboratory course in reproductive physiology and most of those who took an advanced course in embryo transfer and animal biotechnology. For his teaching efforts, he received all of the most prestigious university and SUNY teaching awards available.

Dr. Foote has served on the NIH Reproductive Biology Study Section, Program Manager of the USDA Competitive Grants, many committees, and Director and President of SSR. He has served on

## AWARDS

the editorial board of six journals, including "Cloning" at the present time.

His research has resulted in about 500 peer-reviewed full publications. He has been recognized for his research by receiving the New York Farmers' Award for contributions to Northeast Agriculture, National Association of Animal Breeders' Award for Research in A.I. and Physiology of Reproduction, ASAS Animal Physiology and Endocrinology Award, Outstanding Andrologist, Upjohn Physiology Award and L.E. Casida Award for Excellence in Reproductive Physiology.

Dr. Foote has twice been recognized by Japan for his contributions to science, by China Agricultural University as an Honorary Professor, and by The University of Connecticut as a Distinguished Alumnus.

Cornell appointed Dr. Foote to a distinguished professorship in 1980, a position he still holds as professor emeritus. All of this was made possible by the stimulation and dedication of wonderful students and collaborating scholars.

**SSR Distinguished Service Award.** (Sponsored by Serono Laboratories, Inc.) Dr. Fuller W. Bazer



was nominated for the Distinguished Service Award because of his service to reproductive biology and SSR. He has provided leadership in organization of numerous meetings in reproductive biology and was a co-founder of the Gordon Research Conference on Reproductive Tract

Biology. His current leadership responsibilities at Texas A&M University and The Texas A&M University System Health Science Center allow him to communicate across disciplines of health and animal sciences to enhance strong science-based interdisciplinary research and teaching programs. Dr. Bazer is an excellent teacher and mentor for trainees. He has served as chair or co-chair of committees for 23 Ph.D. students, 32 M.S. students, committee member for 107 graduate students and mentor or co-mentor for 28 postdoctoral fellows. His trainees will attest that he is a mentor par excellence who inspires by example. For excellence in graduate education, he

received the L.E. Casida Award for Graduate Education from the American Society of Animal Science. Dr. Bazer instills in students the value of cooperation and free dialogue so that many students trained by him continue to collaborate and continue to be good friends, which is the greatest compliment and a benchmark for "Distinguished Service." Dr. Bazer has served the SSR as a Director, Editor-in-Chief, President-Elect, President, Past-President, and member of the Editorial Board of *Biology of Reproduction* which afforded him opportunities to imprint his vision on the SSR. Between 1989 and 1995, at the University of Florida and Texas A&M University, he worked with Drs. William "Bill" Thatcher and Robert Burghardt, and Ms. Judith Jansen to improve *Biology of Reproduction*. His philosophy was that *BOR* is a peer-reviewed journal and that the editorial office is to facilitate communications and decision making between authors and reviewers. Dr. Bazer increased the visibility and stature of *BOR* by appointing international scientists to the editorial board, soliciting mini-reviews from international scientists, and recruiting SSR members from international scientists. As President of SSR, Dr. Bazer appointed and administrated a Blue Ribbon Committee that assessed the status of SSR after 30 years and made recommendations for charting its future. At present, SSR is a first-class society with the premier journal in reproductive biology. This is not due to any single person, but reflects the collective wisdom of many visionary leaders. Dr. Bazer is one leader who has left a lasting imprint on the SSR. Dr. Bazer is recognized for his research on uterine biology, pregnancy recognition signaling in pigs and ruminants, and fetal-placental physiology and endocrinology. He received the "Physiology and Endocrinology Award" of the American Society of Animal Science and the SSR Research Award due to his ability to excel in productive and functional collaborations with investigators at the University of Florida and Texas A&M University. His record of accomplishment in research, teaching and service documents his stature as a leader in reproductive biology. This has been fostered through leadership, excellence in science and personal friendships founded on the highest level of personal and scientific integrity.

## AWARDS

---

**SSR Research Award.** (*Sponsored by the Society for the Study of Reproduction.*) Dr. Norman Hecht



is the 2000 winner of the SSR Research Award. Dr. Hecht received a Ph.D. in microbiology from the University of Illinois in 1967. After postdoctoral studies at the University of California, San Diego, Dr. Hecht accepted a position as Assistant Professor of Biology at Tufts University. Over the next 21 years Dr. Hecht carried out

studies on the molecular biology of spermatogenesis at Tufts. In 1997, he accepted his current position as the William Shippen, Jr., Professor of Human Reproduction at the University of Pennsylvania. Dr. Hecht's work has centered on the expression of genes in haploid male germ cells. In the late 1970s and early 1980s Dr. Hecht presented evidence for gene expression in round spermatids. This work was very controversial for many years because the dogma at the time was that haploid cells, and especially spermatids, were transcriptionally inactive. Dr. Hecht's research continued to provide unequivocal evidence for extensive transcriptional activity in haploid cells with investigations of germ cell-specific actins, tubulins, and protamines. Post-meiotic gene transcription is now an accepted concept that is under investigation in a number of laboratories. Dr. Hecht's research was instrumental in developing this entire field of study.

In the last 6 years Dr. Hecht has focused on understanding the regulation of post-meiotic expression of genes, and the mechanisms by which mRNA is stored before it is translated in spermatids. One of the RNA binding proteins (TB-RBP) that he has described has been identified as a homolog of Translin, a previously characterized brain protein associated with chromosomal translocations. Dr. Hecht's current evidence indicates that TB-RBP is involved in mRNA translational repression, movement, and localization. His studies on the regulation of post-meiotic expression of genes have led to characterizations of the promoter regions of the mouse protamine and transition protein genes,

the superoxide dismutase gene, and the testis-specific cytochrome c gene. His current work in this area is focused on the down regulation of the cytochrome c (somatic) gene and the coordinated up-regulation of the cytochrome c (testis) gene. He has shown that an intermediate, non-functional, cytochrome c (somatic) transcript with an extended UTR may be an important intermediate in this coordinated process. He is also pursuing studies on a superoxide dismutase RNA binding protein that regulates translation of this mRNA.

Dr. Hecht's research is highly creative, requiring insight that transcends previously held views. He has developed new approaches and techniques associated with nearly every phase of this research. He is greatly respected as a leader and innovator in this field. Besides the research productivity, his leadership in this field is exemplified by continual funding from NIH, the large number of invited seminars and research presentations he has given, the number of students and postdoctoral fellows he has trained, and the extensive number of collaborators that have sought his help.