In recognition of their outstanding contributions to Applied Animal Andrology, the following individuals have been awarded lifetime honorary membership in the AAAA:

2002

John O. Almquist

John O. Almquist moved with his parents to a farm in Alden, New York where he spent his childhood and developed his love for cattle. He was active in 4-H and was a cattle judge for summer county fairs. He received a B.S. degree from Cornell in 1942, a Master's degree from Purdue in 1944, then his Ph.D. from The Pennsylvania State University (PSU) in 1947. He subsequently joined the staff at PSU, eventually becoming Professor of Dairy Physiology, and then Emeritus Professor. He served on Penn State's Dairy and Animal Science faculty from 1944 until 1982 and established Penn State's dairy breeding research program. Following his retirement, the lab was rededicated as the "John O. Almquist Dairy Breeding Research Center". He received the 1976 National Association of Animal Breeders Research Award, the Wolf Award in 1981, the 1998 Penn State Distinguished Alumnus Award, the 1998 National Award for Agricultural Excellence from the National Agri-Marketing Association, and the 1999 Pioneer Award from the National Dairy Shrine. During his career he authored numerous scientific papers detailing advancements in methods of semen collection, semen freezing/thawing, reproductive capacity of bulls, puberty, and sperm morphology. And, importantly, he mentored numerous undergraduate and graduate students, many of whom have gone on to also become renown in the field of reproductive physiology.

Robert H. Foote

Robert Hutchinson "Bob" Foote was born Aug. 22, 1922, on a dairy farm in Gilead, Connecticut, USA. He majored in animal husbandry, earning his bachelor's degree from the University of Connecticut, Storrs in 1943. Commissioned a lieutenant in the Army during World War II, he was assigned to the "Go for Broke" 442nd Regimental Combat Team, a unit of Japanese Americans, or Nisei. The 442nd had a high casualty rate and was the most decorated unit in U.S. history. Bob himself was severely wounded and received a Bronze Star for his service.

After effects of the injury altered his plans to become a farmer, and he used the GI Bill to study animal physiology at Cornell University, where he received his master's degree in 1947 and his doctorate in 1950 in the field of animal breeding and physiology. He subsequently joined the faculty in Animal Science at Cornell as an Assistant Professor. He was promoted to Associate Professor in 1956 and was awarded a Fullbright Scholarship to the University of Copenhagen in 1958. In 1963, he was promoted to Professor in the Department of Animal Science at Cornell, and then

named the Jacob Gould Professor of Physiology in 1980. Bob remained at Cornell for the rest of his career, publishing more than 500 papers.

Bob excelled as a teacher of reproductive physiology and served as mentor to numerous undergraduate, graduate students and post-docs and welcomed visiting scientists from around the world to his laboratory.

He discovered that treating bull semen with a mixture of the antibiotics penicillin, streptomycin and polymyxin could control *Vibrio fetus*, a bacterium that causes abortions and infertility in livestock and had cost the livestock industry hundreds of millions of dollars. This work became the basis for the global use of antibiotics in frozen bovine semen. During his early career, he developed a strong relationship with the artificial breeding industry and subsequently became one of the industry's leading scientific leaders. He developed an early semen extender for fresh semen, the Cornell University Extender ("CUE") and later made refinements to Tris-based extenders for frozen bovine semen. His research interests expanded to related areas in male reproductive physiology, including qualitative and quantitative aspects of spermatogenesis, semen quality measurements, evaluation of male fertility, as well as sperm capacitation. He also made major contributions to the study of female reproduction with the early observation that the germ cell content of the mammalian ovary is finite. He investigated improvements in the detection of estrus and the importance of insemination of cattle at the optimum time.

Bob was active in at least 13 professional or honor societies, including the National Association of Animal Breeders. He served as President of the Society for the Study of Reproduction; on the editorial boards of *the Journal of Andrology*, *Cryobiology, Theriogenology* and *Cloning*; as member of the study section for Reproductive Biology at the National Institute of Child Health and Human Development; as program manager for Reproductive Physiology at the US Department of Agriculture; and as panel member, *ad hoc* reviewer and advisor for innumerable agencies and organizations related to the field of reproductive physiology. He was the recipient of the National Association of Animal Breeders Research Award, the American Association of Animal Science Animal Physiology and Endocrinology Award, the L.E. Casida Award, the American Dairy Science Association Upjohn Physiology Award, the American Society of Andrology Outstanding Andrologist Award, the Society for the Study of Reproduction Carl G. Hartman Award, the International Embryo Transfer Society Pioneer Award (for A.I., E.T., and cloning), the Pioneer Award from National Dairy Shrine, the S.U.N.Y. Chancellor's Award for Excellence in Teaching, and the Edgerton Lifetime Teaching Award at Cornell University.

Werner Leidl

Werner Leidl studied veterinary medicine at the University of Munich, where he received his Doctor Medical Veterinary degree in 1951. He then served as a research assistant in the Gynecology and Ambulatory Animal Clinic at the University of Munich. In 1957, he earned his "habilitation", prior to moving to Utah State University as a Visiting Associate Professor. In 1961, he became Visiting Professor, at the University of Cairo, Egypt, before returning to Munich as Professor of Andrology and Artificial Insemination. In 1970, he became Professor of Physiology and Pathology of Reproduction in Domestic Animals. International travels, study and teaching brought him to Southern Illinois University in 1971 as a Visiting Professor, before returning to the University of Munich in 1972 as Director of the Gynecology and Ambulatory Animal Clinic. In 1993, he was awarded Professor Emeritus status.

During his career he was awarded several honors, including Member of the Senate at the University of Munich (1979-1981); Vice-Dean (1982) and then Dean (1983-1985) of the Faculty of Veterinary Medicine, University of Munich; Vice-President of the University of Munich (1987-1993); Honorary member of the Japenese Society of Animal Reproduction (1978); Professor de Honor, Escuela de Medicina, Universidad Nacional, Heridia, Costa Rica (1988); "Dr. med. Vet. h.c." School of Veterinary Medicine, School of Veterinary Medicine. Academy of Agriculture, Poland (1988); "Dr. med. Vet. h.c.", University of Veterinary Medicine, Vienna Austria (1989); "Dr. med. Vet. h.c.", University of Veterinary Medicine and Pharmacy, Bruno Czech Republic (1989); Membership Award of the Japenese Society of Zootechnical Science (1985); "Dr h.c.", Obihiro University of Agriculture and Veterinary Medicine, Japan (2006).

Werner especially dedicated his career to teaching of veterinary medicine and applied andrology. He is well known for his sperm morphological preparations and was instrumental in early development of digital teaching tools in this field.

Chris Polge

Ernest John Christopher "Chris" Polge and his colleague, Dr. Audrey Smith, discovered the key to preservation of living cells and tissues at very low temperatures. Their discovery of a class of chemicals, especially glycerol, now known as cryoprotective agents, and the later addition of glycerol in egg yolk-based semen extender with Lardy and Phillips opened the door to cryopreservation of semen from many species.

He was educated at Bootham School in York, UK, then studied agriculture at the University of Reading. His doctorate was achieved at the Division of Experimental Biology at the National Institute for Medical Research at Mill Hill, London. He then moved to the Animal Research Station at Cambridge under the direction of Sir John Hammond. Later in his career, Chris realized that embryo freezing would enhance the bovine embryo transfer industry. These studies resulted in the birth of "Frosty" in 1973 from a cryopreserved embryo. He subsequently recruited Ian Wilmut to lead the team at the Animal Research Station to develop animal cloning, resulting in the birth of "Dolly". In his final years as Head of the Animal Research Station he fostered and encouraged projects aimed at the production of chimeras and identical offspring of animals. After his retirement from the Animal Research Station in 1996, Chris co-founded Animal Biotechnology Cambridge, a commercial enterprise to bridge the gap between research discoveries and commercialization of agricultural products and processes. Chris was elected to the Royal Society and the US Academy of Sciences.

2010

Steve Salamon

Steven Salamon was born in the Transylvanian region of what is now Romania in 1918. He studied agricultural science receiving his undergraduate degree in Budapest. He holds the degrees of Ph.D. (Budapest), Cand. Agric. (Moscow) and M.Agr.Sci. (Sydney). He served with distinction in the Carpathian Division in World War 2. He was captured and held as a prisoner of war in the Soviet Union from 1943 until repatriation to Hungary after the war. Despite considerable ordeals while in prison, he returned to Moscow to undertake a Candidature in Agriculture (Ph.D. equivalent) and subsequently continued research on artificial breeding after returning to Hungary. He was Research Scientist, Institute of Animal Breeding, Budapest (1948-52) and Research Fellow, Timirjazev Agricultural Academy, Moscow (1952-1956).

Steve left Hungary during the 1956 revolution, escaping first to Germany and later emigrating to Australia. He obtained positions first with CSIRO Division of Animal Production, and subsequently joined the Department of Animal Husbandry at the University of Sydney in 1959, where he was to remain for the rest of his career.

During his research career in Australia, Steve was responsible for some of the most important developments in semen preservation in sheep, pigs and goats. Most importantly, he developed the first successful freezing of ram semen resulting in fertility after artificial insemination. The techniques he developed still form the basis of all commercial ram semen freezing, used in an industry which inseminates more than 1.5 million ewes per annum worldwide. With Chris Polge in Cambridge in the late 1960s, he also produced the first offspring from frozen semen in pigs after surgical deposition of frozen-thawed spermatozoa in the oviduct.

His many other contributions have included the transfer and adaptation of artificial breeding technology, originally developed in Russia and Eastern Europe, and the training and mentoring of postgraduate students, technicians and farmers in its correct application in laboratory research and field application.

He is a distinguished linguist being fluent in six languages, including Russian. This capacity proved of immense value to Australian science during the cold war era through an opening of a window on biological science in Eastern Europe. Dr Salamon is author of more than 100 journal papers and book chapters, the original edition of a practical manual on artificial insemination of sheep and goats, and a standard textbook which was published in Germany in the 1960s. He was an excellent teacher, with a unique sense of humor well matched to his subject; he was renowned for his engaging stories, often salted with Latin proverbs, and for his practical class teaching.

He retired as Reader in Animal Husbandry from the University of Sydney in 1982 but has continued an active involvement and interest in both research and the industry to the present, as evidenced by his recent active participation in the International Congress on Animal Reproduction (Budapest, 2008) at the age of 90 years, where he received the Hetzel Award for lifetime distinguished service from the Hungarian Society for Animal Reproduction. He was awarded the Order of Australia (AM division) for his services to Australian agriculture and the Hungarian migrant community.

Brian Setchell

Brian Setchell was Professor of Animal Sciences at the Waite Agricultural Research Institute, University of Adelaide, Australia, from 1982 until his retirement in 1996. He worked at the New South Wales (NSW) Department of Agriculture, at the CSIRO Division of Animal Physiology in Prospect NSW, and at the Babraham Institute in Cambridge, UK before returning back to Adelaide. Since 1996, he has been a Visiting Research Fellow in the Discipline of Anatomy and Pathology in the School of Medical Sciences and in 1997 and 2000 at the Pediatric Endocrinology Unit at the Karolinska Hospital, Stockholm. He graduated BVSc from University of Sydney in 1952, and has a Ph.D. (1957) and ScD (1977) from the University of Cambridge. He became Member, Royal College of Veterinary Surgeons (1974), Scientific Fellow, Zoological Society of London (1975) and Fellow, Institute of Biology (1978). He has been the recipient of numerous awards, including the Regnier de Graaf Award (1973), Honorary Life Member of the Australian Society for Reproductive Biology (1994), and the American Society for Andrology Distinguished Andrologist Award (1997).

He published "The Mammalian Testis", a translation of the original text in Italian by Enrico Sertoli which discusses the cells in the testis which now bear his name. He was involved in translations with H.D. Jocelyn from Latin of Regnier de Graaf's two books on the anatomy of the reproductive systems of men and women, and wrote 76 reviews or chapters in books, 152 articles and 213 abstracts on the physiology, biochemistry and endocrinology of the testis and epididymis, as well as 46 articles on metabolism of the brain and other organs.

2012

Glenn Coulter

Glenn Coulter received his PhD from Cornell University under the tutelage of the late Dr. Robert Foote. His graduate studies focused on testicular development in the bull. In 1974 he commenced his career as a Research Scientist at the Lethbridge Research Centre, in Lethbridge, Alberta, Canada (a research institution operated by the Federal Ministry of Agriculture). At Lethbridge, he worked with beef bulls, primarily to improve their fertility and to determine better methods of assessing their reproductive potential. In that regard, he conducted many studies on the effects of post-weaning nutrition on development and fertility, pioneered the use of infrared thermography to assess scrotal/testicular thermoregulation, and showed that ultrasonography did not adversely affect sperm production or semen quality. Glenn has been passionate that his work should benefit the cattle industry. He travelled extensively within Western Canada as well as around the world, to examine bulls and to share his knowledge about them with others. Later in his career, Glenn devoted increasing amounts to administration, with the last few years dedicated to commercialization of technology and the management of intellectual property. He has continued to consult in those areas after retiring from his job in 2007. Glenn was instrumental in recruiting John Kastelic to the Research Centre and served as John's supervisor and mentor for many years. It is noteworthy that Glenn is one of the founders of the AAAA and

served as its president for several years. Furthermore, through his vision and efforts, the AAAA was incorporated in Canada as a not-for-profit organization.

György Gábor

A Hungarian by birth, György Gábor ("George") obtained a veterinary degree from the University of Veterinary Sciences in Budapest in 1980, followed by a Ph.D. in 1992. Subsequently he worked as the Head Field Veterinarian on State farms for several years before joining the Faculty of Animal Husbandry of the Agricultural University in 1983 where he served as Associate Professor and Vice Head of the Department of Animal Physiology and Health. Here he was actively involved in research work on reproduction and infectious diseases of cattle and rabbits. In 1992, George joined the Research Institute for Animal Breeding, Herceghalom, Hungary, where he served as a scientific co-worker, senior scientist and scientific advisor. Over this time, George produced an enviable dossier of scientific works which included trail blazing studies on applying new technologies, such as R/T ultrasound and thermography to male reproductive assessment, developing a computer based sperm analysis program, and establishing databases on bull reproductive parameters. In 1997, he co-moderated an International Andrological Workshop in Hungary, which had profound implications for the establishment of AAAA. By the time this meeting was concluded, a small dedicated band of idealists had decided that the world needed an Association for Applied Animal Andrology, and the groundwork had been laid for its constitution, logos and subsequent meetings.

2014

Rupert P. Amann

Rupert Amann is internationally known for research on testicular and epididymal function, male reproductive endocrinology, semen preservation, and the diagnosis and therapy of subfertility. He has served as a critical conduit between basic research with laboratory and farm animals and application of these findings to improve the reproductive efficiency of farm animals (e.g., cattle, horses, poultry) and humans. Rupert began his career as an undergraduate at the University of Maine, prior to migrating to The Pennsylvania State University for his M.S. (1957) and Ph.D. (1961). Following a postdoctoral appointment at the Royal Veterinary and Agricultural College in Copenhagen, he returned to The Pennsylvania State University, earning full professorship in 1972. In 1975, he moved west to join Colorado State University as a visiting professor and eventually returned to Colorado State as Professor in 1979, until his retirement in 1995. His research has involved 16 species, including human, and has utilized several highly innovative techniques. He has presented invited lectures at international meetings of physicians and scientists, or seminars, in at least 13 countries on 4 continents. He has mentored 22 M.S. and Ph.D., and 10 postdoctoral students. His list of awards, honors and publications is

extensive. Colleagues from around the world know Rupert for his breadth of knowledge, spirited discussions and enthusiasm.

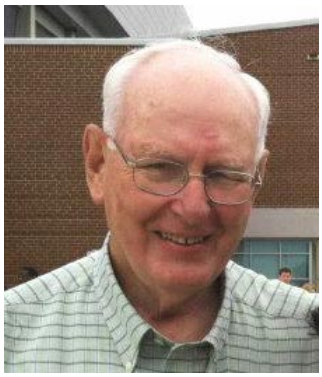
Gareth Evans

Gareth Evans attended the University of Oxford, UK where he received his B.A. in 1974, followed by his Ph.D. in 1978 from the University of Sydney. He was a Ford Foundation Fellow in the College of Veterinary Medicine at the University of Illinois 1978-1979), and a Medical Research Council Fellow at the University of Western Ontario, Canada (1979-1982). His academic travels then brought him back to the University of Sydney in 1983, where he was first Lecturer Associate Professor, then Professor (2002-2008). He also served as Associate Dean for Research from 2004-2008, prior to achieving Emeritus Professor status in 2008. Gareth's research aims have been focused on achieving solutions to animal husbandry problems and increasing reproduction efficiency. He has conducted research on laboratory animals, sheep, goats, deer, pigs, cattle, horses, humans, non-human-primates and wildlife. A primary focus has been the control of ovulation, especially in sheep and pigs, superovulation, artificial insemination, seasonality and embryo transfer. His studies have culminated in the development of standard practices for the sheep AI industry. In more recent years, his laboratory focused on semen sexing technologies and achieved several "world firsts" in this field. He has published numerous scientific and lay papers, been the guest speaker at various international meetings and symposia, served as international collaborator to several labs, hosted several visiting scientists and students, mentored more than 45 advanced degree-students and been an outstanding teacher.

WMC "Chis" Maxwell

Chis Maxwell received his BScAgr in 1974 from the Faculty of Agriculture at the University of Sydney, and continued on to earn his Ph.D. in 1978. His doctoral studies with Dr. Steven Salamon refined techniques for freezing semen and artificial insemination of sheep and pigs. In 1978, he joined the University of Wales in Aberystwyth as a postdoctoral fellow, then returned back to the University of Sydney in 1980 to the Department of Animal Husbandry as a Research Fellow. In 1981, he became Research Scientist with the Western Australian Department of Agriculture in Katanning, where he developed expertise in sheep laparoscopic insemination and embryo freezing. In 1986, he became Principal Officer Sheep and Wool, within the Department of Agriculture in Adelaide, South Australia. In 1991, his career brought him back to the University of Sydney as Lecturer, Associate Professor, and Professor in 2002. In Sydney, his interests expanded to the area of sexed semen and took him to the USDA in Beltsville, Maryland as a visiting scientist on several occasions. He also enjoyed Visiting Scientist sojourns at Virginia Polytechnic and State University (USA), the Institut für Tierzucht und Tierverhalten (Mariensee, Germany) and the Department of Animal Medicine and surgery at the University of Murcia, Spain. He assumed the role of Head of the Department of Animal Science (1998-2001), Associate Dean, Staff and Students (2001-2004) and then Pro Dean (2004-2008) in the Faculty of Veterinary Science at the University of Sydney, prior to becoming Emeritus Professor in 2008. Chis has achieved numerous research publications, has served as invited speaker and lecturer at various international conferences, has collaborated with scientists from around the world, and has been a distinguished teacher and mentor.

Richard G. “Dick” Saacke



Richard “Dick” Saacke is now Professor Emeritus of Reproductive Physiology at Virginia Polytechnic Institute and State University, Blacksburg, Virginia, USA. He is a graduate of Rutgers University (B.S., 1953) and holds advanced degrees (M.S., 1955; Ph.D., 1962) from the Pennsylvania State University, where he remained as Assistant Professor in Dairy Science. In 1965, he moved to the Dairy Science Department at Virginia Tech, where he became Professor in 1969. His work has centered on the structure and function of the mammary gland, spermatozoa and ova. Particular areas of research emphasis have included optimization of semen preservation methods and identification of semen traits important to sperm transport in the female, to fertilization, and embryonic development, with the general focus toward improvement of reproductive efficiency using artificial insemination. Dick has authored or co-authored numerous research papers reviews and scientific contributions in journals proceedings and symposia. He has been a frequent invited speaker at international meetings and symposia. He has been recognized for his research and teaching. He has served as a technical advisor to several commercial organizations, and supervised the dissertations of 18 M.S. degrees and 13 Ph.D. students. Dick is known internationally for his scientific expertise and his love for family and fly fishing.

2016

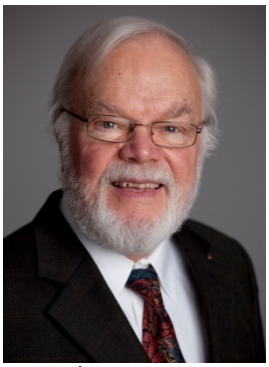
Don Evenson

Don Evenson received his B.A. degree in Biology/Chemistry from Augustana College, Sioux Falls, South Dakota and his Ph.D. in Cell and Molecular Biology at the University of Colorado (Boulder). This was followed by a two-year postdoctoral study of mammalian DNA structure at the Institute of Molecular Biophysics, Florida State University, then two years at the Union Carbide Research Institute, Tarrytown, New York studying the DNA structure of a chicken cancer virus. He then served a dual faculty appointment at the Memorial Sloan Kettering Cancer Center (MSKCC) and Cornell Graduate School of Medical Sciences in New York City. During this time, he studied the structure and function of the mammalian testes and spermatozoa and invented the Sperm Chromatin Structure Assay [SCSA®], which evaluates both DNA strand breaks and chromatin integrity. In 1983, he moved to Brookings, South Dakota to join the faculty as Professor of Biochemistry at South Dakota State University (SDSU), where he continued over the course of more than 25 years to further develop the SCSA® protocol and study its significance in relationship to male factor infertility in humans, pigs, horses, cattle and zoo animals. The SCSA® is internationally recognized as the first proven commercial test of sperm DNA integrity. Dr. Evenson is currently President and Director of SCSA Diagnostics, in Brookings, and is certified as a High-Complexity Clinical Laboratory Director and Clinical Consultant by the American Board of Bioanalysis (ABB), and an Adjunct Professor in the Department of Obstetrics and Gynecology, Sanford Medical School, University of South Dakota, Sioux Falls, South Dakota.

Dr. Evenson has authored more than 150 peer-reviewed publications that have been cited more than 10,000 times in other publications. He is a member of several professional societies, including the Society for Theriogenology, American Society of Reproductive Medicine, American Fertility Society, American Association of Bioanalysts, Canadian Fertility and Andrology Society, the Society for the Study of Reproduction and the American Association for Advancement of Science. He also serves as a reviewer for various journals. Don has received multiple awards during his tenure at SDSU including the title of Distinguished Professor and the Lifetime Achievement Award from Augustana College. He also carried out sabbaticals at the Norwegian National Hospital in Oslo and the Department of Animal Science, University of Sydney, Australia.

Karl Fritz "Charlie" Weitze

Karl Fritz "Charlie" Weitze obtained his Dr.med.vet. degree (with distinction) in 1966 from the School of Veterinary Medicine Hannover, Germany (Tierärtzliche Hochschule Hannover). He then remained in



Hannover as Junior lecturer of Artificial Insemination and Andrology of Domestic Animals. He received his "Habilitation" and "Privatdozent" in Hannover in 1978, then advanced to Professor in 1983. Although he officially retired in 2002, he continues as a senior researcher in the pig reproduction research group in Hannover and as a consultant worldwide. Over these years, Dr. Weitze had the opportunity several times to be Visiting Professor at the Universidad Austral de Chile (Valdivia, Chile), the Universidade Federal de Santa Maria (Brazil), the Universidade Federal Rural de Pernambuco (Brazil), the National University of Asuncion (Paraguay), and the Eduardo Mondlane University and the National Institute of Animal Production (Maputo, Mozambique). In 1987, he was invited to Heredia, Costa Rica and Guatemala to evaluate their faculties and post graduate programs in "Tropical Veterinary Medicine and "Herd Health". In 1996, he received the "Award of Merit" (Merito Medico Veterinario no Grau de Comendador) from the Brazilian Veterinary Society. Since 1997, he has been the leader of cooperative research in pig reproduction with the Veterinary Faculty of the Federal University of Rio Grande do Sul (Porto Alegre RS, Brazil). In 1999, he received the "Dr. honoris causa" from the Federal Rural University of Pernambuco (Recife, Brazil) and in 2004 became an honorary member of the Society of Veterinary Medicine of Bahia (Brazil). He has authored more than 100 peer reviewed publications, 9 book chapters, and numerous abstracts and oral presentations in national and international professional meetings and artificial insemination industry meetings. He sponsored 1 "habilitation" thesis and more than 100 "Dr. med vet" theses, including 22 from students from Brazil, Chile, Mexico, Argentina and Costa Rica.

Dr. Weitze is internationally recognized for his expertise in animal reproduction, as a clinician, teacher/mentor and for his research in rabbit, bulls and pigs. His research has included studies of epididymal and testicular function, cryopreservation of semen, intracervical thawing of semen, sperm transport in the female reproductive tract, low dose insemination, the effect of intrauterine infusion of seminal plasma on the timing of ovulation and sperm transport. In the female, he was first to visualize pig ovaries in standing gilts and sows using real-time ultrasound and then to describe the relationship between the onset of weaning, the duration of estrus, the timing of ovulation and the resulting impact of timing of artificial insemination. He developed and field tested the most widely used boar semen extenders now in use in the world.

2018

Duane L. Garner

Duane Garner is now Professor Emeritus in Animal Biotechnology at the University of Nevada, Reno, Nevada, USA, and since 2006, Consultant for GametoBiology Consulting in Graeagle, California. Early in his life he gained an appreciation for agriculture on his family ranch in the San Joaquin Valley of California. He earned several livestock judging awards at Future Farmers of America [FFA] events and four California State Fair Championships with his sheep projects. In 1959 he was drafted into the military serving as a Veterinary Specialist in the US Army Medical Research Laboratory at Fort Knox, KY. He later graduated from California State University, Fresno (B.S., 1964) and then received advanced degrees (M.S., 1967; Ph.D., 1969) from Washington State University. He was an NIH Postdoctoral Research Fellow at the University of Illinois working under the direction of G. W. Salisbury before moving to Oklahoma State University in 1972 where he became a Professor in 1984. He served as a Guest Scientist at Lawrence Livermore National Laboratory in 1981 where he was on the team that first differentiated between X- and Y-sperm using DNA content. In 1985, he left Oklahoma State to become Professor and Chair of the Department of Animal Science at the University of Nevada, Reno, where he continued his research efforts using flow cytometry to assess sperm quality. He left Reno in 1999 to serve as Vice President for Research and Development for XY, Inc. in Ft Collins, Colorado with the goal of commercializing sex-sorting of mammalian sperm. In 2000, he was appointed Adjunct Professor at Colorado State University in Ft Collins. In 2006, he founded GametoBiology Consulting in Graeagle, California. Duane is recognized as being among the first group of scientists to purify acrosin and to use immunofluorescent localization of acrosin in the analysis of sperm. He developed an expertise in flow cytometric analyses of male gametes and developed the SYBR-14 /propidium iodide assay for sperm viability. This assay was later commercialized and is internationally used and recognized as one of the premier techniques for evaluation of sperm quality. Duane has served on many university and professional committees, is a reviewer for scientific journals and has participated as an invited speaker at many scientific meetings, workshops and technical conferences, including several Gordon Research Conferences and National Association of Animal Breeders Technical Conferences. He has been the author and co-author of numerous scientific publications.

Lawrence “Larry” A. Johnson

Lawrence “Larry” Johnson received his B.S. in Agriculture Education-Chemistry from the University of Wisconsin – River Falls (1961), his M.S. in Dairy Science-Biochemistry from the University of Minnesota (1963) and his Ph.D. in Animal Science-Physiology (1968) from the University of Maryland. He served a Chemist at

the Swine Research Branch of the USDA, Agricultural Research Service [ARS] in Beltsville, Maryland from 1964-1968. He then advanced at the ARS, becoming Research Physiologist, Swine Research Branch (1968-1972); Senior Scientist, Reproduction Laboratory (1972-1991), and then Research Leader, Germplasm & Gamete Physiology Lab (1991 – 2000). He retired from the ARS in 2000 to become a private consultant. From 1977-1978, he was a Visiting Scientist at the Research Institute for Animal Production in Zeist, The Netherlands. Larry has received several honors and awards: the superior Service Award from the USDA, ARS (1977); the Animal Physiology and Endocrinology Award from the American Society of Animal Science (1991); Distinguished ARS Senior Scientist Award from the USDA, ARS (1994); the Alexander von Humboldt Award for his "most significant contribution to American Agriculture in the previous five years" (1994); the Distinguished Alumnus, University of Wisconsin-River Falls (1995); and the Research Award from the National Association of Animal Breeders (2003). He was also names as Honorary Member of the Japanese Swine Science Society (1996), a Fellow of the American Society of Animal Science (2000); and was inducted into the USDA-ARS Science Hall of Fame (2003). He has been awarded two United States Patents for "Method to preselect the sex of offspring" and the "Flow cytometry nozzle for high efficiency cell sorting". Larry is especially recognized for his research providing methodology for successful freezing of boar semen for artificial insemination, the development of the Beltsville Thawing Solution [BTS], application of liquid storage of boar semen, and especially for development of flow cytometric sexing of semen. The BTS solution, developed originally as a thawing solution, later became globally used as a fresh (liquid) boar extender. The flow cytometric sexing technology is now in use in many laboratories around the globe with semen from several domestic and exotic species. Larry has published more than 200 refereed scientific articles and book chapters. He has traveled worldwide to present research data at conference and other venues.

2020

Susan S. Suarez

Susan Suarez is Professor Emeritus in Biomedical Sciences at Cornell University. She received a BS (with Honors and Distinction) in Biology from Cornell in 1971 and an MS in Marine Biology from the Rosenstiel School of Marine and Atmospheric Science, University of Miami, in 1974. From these programs, she acquired a background in the biology and ecology of fishes. For her PhD program in Biology at the University of Virginia (1981) and postdoctoral appointment in Reproductive Biology at the University of California at Davis (1981-1985), she moved on to learn mammalian sperm biology and ecology. Specifically, she focused on the mechanisms that govern sperm motility and the interactions of sperm with the environment of the female reproductive tract. She was appointed Adjunct Assistant Professor in the School of Veterinary Medicine at UC Davis and then moved in 1988 to a tenure track appointment as Assistant Professor at the University of Florida College of

Veterinary Medicine, where she taught histology and equine gross anatomy to veterinary students and continued her research. After tenure and promotion to Associate Professor, she moved to the College of Veterinary Medicine at Cornell as Associate Professor and again earned tenure, while teaching veterinary anatomical sciences and continuing her research on mammalian sperm biology and ecology. She became Professor at Cornell in 1999 and Professor Emeritus in 2017. She also served as Visiting Professor at the University of Veterinary Medicine Hannover in Germany, Osaka University in Japan, the University of Newcastle in Australia, and Obihiro University in Japan, and also Guest Professor at Tongji Medical College in Wuhan, China. She is grateful for support of her research by the NSF, USDA, NIH, and Genex. Her contributions to the understanding of mammalian sperm motility and migration in the female tract were made possible by the hard work of graduate students, post docs, technicians, veterinary students, and undergraduates. The specific contributions include the mechanisms that regulate sperm hyperactivation and how sperm are stored and released from storage in the oviduct. Furthermore, collaborations with biophysicists, bioengineers, and biomathematicians provided her with understandings of the mechanisms of sperm movement and migration that have gone beyond what was possible with only her biology background. These collaborations contributed to building a high-speed fluorescence imaging system for evaluating Ca2+ signaling in hyperactivated sperm, and to an understanding of the functions of hyperactivation, passage of sperm through the cervix, and sperm collective swimming. She is especially grateful to have her basic science work appreciated by the applied and clinical scientists of the AAAA.

Paul Watson

As a 5-year-old without fear standing in his rubber boots stuck in mud surrounded by cows on his uncle's farm, perhaps lies the seed of Dr. Watson's desire to be a vet! His intention never wavered, and he progressed through school and entered the Royal Veterinary College (RVC) with the plan to become a large-animal veterinarian. Later, in his vet course during an intercalated physiology degree, he encountered the excitement of the discovery of new knowledge, which led, after graduating as a qualified veterinary surgeon, to a PhD degree in Sydney, Australia with Ian Martin. Ian's example of supervision formed the model for his own in later years, namely enough freedom to explore one's own ideas but with tight enough control to avoid wasting too much time! A post-doc position at the Zoological Society of London then enabled him to expand his research with a range of species, and also brought him within easy reach once more of the RVC. This gave him opportunity to develop a voluntary teaching role leading to an appointment as Lecturer in Physiology, thus beginning a 33-yr association on the staff of the RVC, during which he received the title of Professor of Reproductive Cryobiology in 1995 and, in 2009, a Fellowship of the Royal College of Veterinary Surgeons. Also, while at the Zoo, Paul was privileged to work with Dr. Bill Holt leading to a life-long research friendship and collaboration. Paul's research interests centered around the physiology of the sperm, with a strong bias towards the cryopreservation of sperm for artificial insemination. The question of the mechanism of cell

damage during cryopreservation was never far from his attention, although in the latter years his interest moved towards the interaction of the sperm with the female tract during its approach to fertilization. While on sabbatical leave at Penn State University, he was an early investigator of the use of flow cytometry with sperm cells and devised a means to estimate the water permeability of the sperm membrane, a necessary component in understanding the biophysics of cryopreservation. With the introduction of multiple fluorescent dyes, it was possible to explore simultaneously several further characteristics of the sperm membrane. During subsequent years, this enabled Paul and his colleagues to investigate how cryopreservation may adversely affect the fertilizing ability of spermatozoa while leaving them still viable. After retirement, Paul was fortunate to win a research grant at the National University of Singapore, which allowed him to travel to Singapore to work for two periods of several weeks, during which he studied the cryopreservation of isolated spermatogonial stem cells. Paul's publications include work on 17 different species. His early introduction to non-domestic species at the zoo spurred an interest in assisted reproduction in endangered animals. He organized the first international conference on Artificial Breeding of Non-Domestic Animals in 1978. With Bill Holt, has subsequently edited several books considering the place of this endeavor in conservation. In the course of his career, he has authored eight books and over 150 research papers and has supervised 19 post-graduate students. In recognition of his research contributions to the subject, he has been awarded both the Marshall Medal of the Society for Reproduction and Fertility (2005) and the inaugural Setchell Medal of the British Andrology Society (2007). Paul expresses his immense gratitude for the recognition he has been afforded. And, he is aware that his development and personal progress has depended on his association with many friends and colleagues from around the world. Research and tertiary-level teaching offered an amazing opportunity to develop friendships with people of many cultures. He says that he has undoubtedly gained far more than he has been able to give.