

# Innovate 2012

**Innovation: Funding Livestock Research  
and Outreach in the Future**

**October 3–5, 2012  
The Cliffs Resort / Shell Beach, California**



The background is a vibrant blue with numerous thin, white, diagonal light rays emanating from the center, creating a sense of depth and movement. A white, rounded rectangular box is positioned in the center, containing the text.

**Look for  
information about  
**Innovate 2013,**  
coming soon!**



## WELCOME

The Innovate 2012: Funding the Future Conference was designed by the American Society of Animal Science to allow animal scientists to envision the future of our profession. The unprecedented budget uncertainty and changes in funding patterns we have recently experienced require a new vision and new strategies to sustain our impressive animal research history and continue our contributions to the benefit of science, man and animals. Success stories in and outside of agriculture, industry perspectives, and global approaches and visions in funding research will be presented for your consideration as possible new strategies. Our challenge is great if animal agriculture is to continue to provide the safest, highest quality and most efficiently produced animals and animal products in the world. At a time when substantial increases in global population and demand for food are forecast, our contributions become even more important. Investments in innovative animal research and the resulting application of new, transformational knowledge and cutting edge technologies have yielded valuable returns. Finding ways to sustain that legacy of advancing our disciplines and systems of production animal agriculture are the core of this conference. At Innovate 2012: Funding the Future, you will hear new ideas, learn of successful strategies employed by others and network with your colleagues to proactively brainstorm and collectively contribute to a successful future for animal agriculture. Join us to help chart a course for an exciting, productive and progressive future in the Animal Science disciplines and industries.

A handwritten signature in black ink that reads "Margaret E. Benson". The signature is fluid and cursive, with a long horizontal stroke at the end.

Margaret Benson  
Past President, American Society of Animal Science

# Innovate 2012

## Innovation: Funding the Future

**Wednesday October 3, 2012**

**2:00 pm**      **Registration Opens**

**5:30 pm**      **Reception**

**6:15 pm**      **Program Begins**

**Setting the Stage**—*Moderator:* Andrew J. Thulin, Professor and Head, Animal Science Department, and Director of Strategic Initiatives, College of Agriculture, Food and Environmental Sciences, California Polytechnic State University, San Luis Obispo, CA

**Public – Private Partnerships for Strong Universities**

Jeffrey D. Armstrong, President, California Polytechnic State University, San Luis Obispo, CA

**Thursday October 4, 2012**

**Session I: The Value and Opportunity for Additional Investment in Animal Agriculture Research.** *Moderator:* Margaret E. Benson, Professor and Chair, Department of Animal Sciences, Washington State University, Pullman, WA

**8:30 am**      **Welcome and Introduction of Innovate 2012**

Margaret E. Benson, Washington State University, Pullman, WA

**8:35 am**      **KEYNOTE: Maintaining Credibility and Mitigating Conflicts of Interest in New Research Funding Models—Perspectives from the Corporate Side**

Bill Weldon, Vice President Global Research and Development, Elanco Animal Health, Greenfield, IN

**9:10 am**      **Returns on Investments in Agricultural Research**

Julian M. Alston, Professor, University of California, Davis

**9:45 am**      **Is it Time For a New Business Model to Support Agricultural Research: An Economist's Perspective?**

Andy Novakovic, E.V. Baker Professor of Agricultural Economics, Cornell University, Ithaca, NY

**10:20 am**      **Break**

**Session II: Funding Models and Perspectives: How Others Worldwide are Enhancing Their Investments.** Moderator: Todd Armstrong, Senior Director, Global Regulatory Affairs, Elanco Animal Health, Greenfield, IN

- 10:35 am**    **How Did Australia Change its Approach to Funding (Food and Agricultural) Research?**  
Heather Burrow, CEO, Cooperative Research Centre for Beef Genetic Technologies, Australia
- 11:10 am**    **Global Approaches to Unique Funding Models**  
Max Rothschild, C.F. Curtiss Distinguished Professor in Agriculture, M.E. Ensminger International Chair; Director, Center for Integrated Animal Genomics US Pig Genome Coordinator, Iowa State University, Ames, IA
- 11:45 am**    **Building Global Research Alliances: Compromises and Opportunities That Can be Used to Move Agricultural Sciences Forward**  
Karl Dawson, Vice President and Chief Scientific Officer, Alltech, Inc., Nicholasville, KY
- 12:20 pm**    **Panel Discussion—Moderators:** Margaret Benson and Todd Armstrong *Panel Participants:* Bill Weldon, Julian Alston, Andy Novakovic, Heather Burrow, Max Rothschild, and Karl Dawson.
- 12:40 pm**    **Lunch**

**Session III: Novel Ideas To Increase Investments in Animal Agriculture**

- 1:45 pm**    **Deans' Panel—Moderator:** David J. Wehner, Dean, College of Agriculture, Food and Environmental Sciences, California Polytechnic State University, San Luis Obispo, CA
- The Deans in the panel will each have a short period of time to address elements of the following questions and then the panel will be open to questions.
- What will be different in the future at their institutions and how do they engage industry?
  - What challenges do they see at their institutions to maintaining funding for agricultural research and extension (outreach)?
  - What strategies have they implemented to address these challenges?
  - What additional opportunities or approaches are they exploring to address these challenges?

***Deans' Panel:***

**Ronnie Green**, Vice President, Agriculture and Natural Resources  
University of Nebraska and Harlan Vice Chancellor, Institute of  
Agriculture and Natural Resources, University of Nebraska-Lincoln, NE

**Michael D. Lairmore**, Dean, School of Veterinary Medicine,  
University of California–Davis

**Daniel J. Bernardo**, Vice President for Agriculture and Extension  
and Dean, College of Agricultural, Human, and Natural Resource  
Sciences, Washington State University, Pullman, WA

**Noelle Cockett**, Vice President, Extension and Dean, College of  
Agriculture; and Director, Utah Agricultural Experiment Station,  
Utah State University, Logan, UT

**3:00pm**      **Break**

***Session IV: The Federal Perspective on Funding Animal Agriculture Research.***

*Moderator:* Deb Hamernik, Interim Associate Vice Chancellor for Research:  
Associate Dean, Agricultural Research Division; Associate Director, Nebraska  
Agricultural Experiment Station, University of Nebraska-Lincoln, NE

**3:15 pm**      **Update from FAIR – What Our Scientists Want and Need. Are Those Wants and Needs Consistent with the Priorities?**  
Deb Hamernik, University of Nebraska-Lincoln, NE

**3:50 pm**      **NSF Perspective: Constraints and Priorities for Funding Animal Science Research.**  
Steve Ellis, Program Director, Physiological and Structural Systems  
Integrative Organismal Systems, National Science Foundation,  
Arlington, VA

**4:25 pm**      **NIH-USDA Collaboration: Dual Models Proposal, What Did We Have to do to Make This Happen?**  
Larry Reynolds, Professor, Department of Animal Sciences, North  
Dakota State University, Fargo, ND

**4:55 pm**      **How to Get Priority Projects Funded: Roles of OSTP, Congress, Federal Agencies and the Scientific Community.**  
Kathie L. Olsen, Founder and Managing Director, ScienceWorks,  
Washington, DC

**5:30 pm**      **Panel Discussion–** *Moderator:* Deb Hamernik  
*Panel Participants:* Deb Hamernik, Mary Beck, FAIR Program  
Committee Co-Chair, Jerry Weigel, FAIR Program Committee Co-  
Chair, Larry Reynolds, Kathie Olsen

**6:00 pm**      **Reception** (Dinner on own)

## ***Friday October 5, 2012***

**Session V: Success Stories from Other Commodities.** *Moderator:* Bruce Golden, Department Head, California Polytechnic State University, San Luis Obispo, CA

- 8:30 am**      **Washington State Fruit Growers – Why Did They Invest?**  
Jim McFerson, Manager, Washington Tree Fruit Research Commission, Wenatchee, WA
- 9:05 am**      **Successful Strategies to Support Crop Research: Can Animal Agriculture Benefit from their Approaches?**  
Karl Glasener, Director of Science Policy, American Society of Agronomy, Crop Science Society of America, Soil Science Society of America, Madison, WI
- 9:40 am**      **National Pork Board’s Model**  
Paul Sundberg, Vice President of Science and Technology, National Pork Board, Des Moines, IA
- 10:15 am**     **Panel Discussion–** *Moderator:* Bruce Golden  
*Panel Participants:* Jim McFerson, Karl Glasener, Paul Sundberg, Ryan Ruppert, Senior Director, National Cattlemen’s Beef Association
- 10:35 am**     **Break**
- 10:50 am**     **Communicating Our Needs and Successes Externally**  
Arlen Leholm, Executive Director, North Central Regional Association of Agricultural Experiment Stations, University of Wisconsin–Madison
- 11:30 am**     **Documenting our Progress**  
Margaret E. Benson, Professor and Chair, Department of Animal Sciences, Washington State University, Pullman, WA
- 12:15 pm**     **Adjourn**



## **DR. JULIAN ALSTON**

Julian M. Alston is a professor in the Department of Agricultural and Resource Economics of the University of California, Davis, where he teaches graduate and undergraduate classes in microeconomic theory and the analysis of agricultural markets and policies. At UC Davis, Alston is a member of the Giannini Foundation of Agricultural Economics and serves as the director of the Robert Mondavi Institute Center for Wine Economics and as associate director for science and technology policy at the University of California Agricultural Issues Center.

Dr. Alston earned a Bachelor's degree in Agricultural Science from the University of Melbourne, a Master's degree in Agricultural Economics from La Trobe University, and a PhD in Economics from North Carolina State University, all with the support of the Victorian Department of Agriculture.

Prior to beginning in his current position in 1988, Dr. Alston had served for several years as the Chief Economist in the Department of Agriculture and Rural Affairs in Victoria, Australia. He has written many journal articles, chapters, and books related to these subjects, and he recently co-authored *Persistence Pays: U.S. Agricultural Productivity Growth and Benefits from Public R&D Spending* (Springer, 2010). He is a Fellow of the American Agricultural Economics Association, a Distinguished Fellow of the Australian Agricultural and Resource Economics Society, and a Distinguished Scholar of the Western Agricultural Economics Association.





## **DR. JEFFEREY ARMSTRONG**

Jeffrey D. Armstrong began his tenure as Cal Poly's ninth permanent president on Feb. 1, 2011, with a determination to further enrich the university's highly regarded Learn by Doing teaching approach.

Dr. Armstrong brings to Cal Poly a blend of experience as an honored teacher, respected researcher, and experienced administrator. At Cal Poly, he has focused on ways to improve graduation rates. To further bolster student success, he has sought to expand university-industry partnerships to attract more applied research to the campus, thus increasing professional development experiences for faculty in order to enrich classroom instruction.

Before joining Cal Poly, Dr. Armstrong served as dean of the College of Agriculture and Natural Resources and professor of Animal Science at Michigan State University (MSU), beginning in 2001. He was head of the Department of Animal Sciences at Purdue University from 1997 to 2001 and served in various positions at North Carolina State University (NCSU) from 1986 through 1997.

Raised on a beef cattle, swine and tobacco farm in Western Kentucky, Armstrong attended Murray State University, where he earned a bachelor's degree in agriculture in 1981. He earned both a master's (1984) and doctorate (1986) in physiology and endocrinology from North Carolina State University.



## **DR. MARY BECK**

Dr. Mary Beck is professor and department head of Poultry Science at Mississippi State University. Prior to assuming this position in February, 2012, Dr. Beck served in a variety of leadership roles at Clemson University, including chair of the Department of Animal and Veterinary Sciences and professor of poultry physiology at the University of Nebraska-Lincoln. Dr. Beck earned her bachelor's degree from the University of Richmond in English Literature. A native of Maryland, she obtained her master's and doctoral degrees in poultry physiology from the University of Maryland. Dr. Beck is the executive secretary of the Southern Poultry Science Society, a section editor of the journal Poultry Science, and past president and Fellow of the Poultry Science Association. She served as co-chair of FAIR 2012.



## **DR. MARGARET BENSON**

Dr. Margaret E. Benson is Professor and Chair of the Department of Animal Sciences at Washington State University, Pullman. Prior to joining WSU in 2007, she progressed through the academic ranks to Professor at Michigan State University in the Department of Animal Science where she was engaged in research, teaching and Extension missions and administrative responsibilities. With degrees from North Dakota State University (BS, MS) and the University of Kentucky (Ph.D.), Dr. Benson's disciplinary expertise is in the field of Ruminant Nutrition. At WSU, Benson oversees a progressive department of 18 faculty, and approximately 25 graduate and 350 undergraduate students.



## **DR. DANIEL BERNARDO**

Dan Bernardo is Vice President for Agriculture and Extension and Dean of the College of Agricultural, Human, and Natural Resources Sciences (CAHNRS) at Washington State University. He has served in the role of dean since August 2005, and in this position is responsible for administering teaching, research, and outreach programs in food, agricultural, natural resource, and human sciences. Together, CAHNRS and WSU-Extension have over 1,500 employees and an annual operating budget of over \$180 million. Prior to moving to Washington State, Dr. Bernardo was Professor and Department Head of the Department of Agricultural Economics at Kansas State University (KSU) from 1995 through 2005. He earned his Ph.D. in Agricultural Economics from Washington State University and a B.S. in Agricultural and Managerial Economics from the University of California, Davis.



## **DR. HEATHER BURROW**

Dr Heather Burrow is Chief Executive Officer of the Cooperative Research Centre (CRC) for Beef Genetic Technologies, operating as an incorporated company to manage Australia's largest integrated beef research program. The Beef CRC comprises research and beef industry partners from Australia, New Zealand, the United States and Korea, with additional co-operators from Canada, the EU, Brazil and South Africa. All collaborators are contributing to research, development, education, extension and commercialisation activities designed from the outset to achieve outcomes that directly value-add the beef industries of their own countries. A quantitative geneticist by training, she is recognised as having specialist expertise in the genetic improvement of tropically adapted beef cattle. She also has extensive expertise and experience in managing multi-disciplinary, multi-organisational research programs that have demonstrably value-added the Australian beef industry by more than \$1.5 billion since 1993.



## **DR. NOELLE COCKETT**

After receiving her M.S. and Ph.D. degrees in Animal Breeding and Genetics from Oregon State University, Noelle Cockett spent five years as a Research Geneticist at the USDA, ARS U.S. Meat Animal Research Center in Clay Center, Nebraska. She joined Utah State University as an assistant professor in 1990, was promoted to associate professor in 1993, and to full professor in 1996. Noelle is currently the Vice President for Extension and Agriculture, the Dean for the College of Agriculture, and the Director of the Agricultural Experiment Station at Utah State University. She has also served as the Interim Dean of the School of Graduate Studies, the Vice Provost for Academic Affairs, and the Interim Provost for the University.

Cockett has published over 100 referred articles, over 180 abstracts, technical reports and proceedings, nine book chapters, and recently edited a book entitled "Genome Mapping and Genomics in Domestic Species". Cockett served as Co-Editor for *Animal Genetics* from 1995-2004 and Chief Editor from 2004-2008.



## **DR. KARL DAWSON**

Dr. Dawson is the new Vice President and Chief Scientific Officer of Research for Alltech Inc. and directs activities at the company's Biosciences centers around the world. His research has focused on strategies for improving animal performance and health by altering microbial activities and digestive processes in the gastrointestinal tract. Dr. Dawson is a co-director of the Alltech Center for Nutrigenomics and Applied Animal Nutrition.

Karl Dawson is an Adjunct Professor of Nutritional Microbiology and served as director of the Nutritional Microbiology laboratory in the Department of Animal Sciences at the University of Kentucky for 20 years. He has also served as the Research Coordinator for the Department of Animal Sciences and Chair of Agricultural Biotechnology Coordinating Committee at the University of Kentucky. He has a B.S. degree in Bacteriology from Utah State University, an M.S. degree in Microbiology from the University of Wyoming, and a Ph. D. in Bacteriology from Iowa State University. He worked for two years as a microbiologist at the National Animal Disease Laboratory in Ames, Iowa, and was employed by the University of Kentucky for 21 years before joining the research team at Alltech in 1999.



## **DR. STEVE ELLIS**

Dr. Ellis is an Associate Professor in the Animal and Veterinary Sciences Department at Clemson University. He received his PhD in Animal Science with a Lactation Physiology Emphasis from Virginia Tech in 1998. His MS degree in Dairy Science was also from Virginia Tech and he completed his undergraduate studies at the University of Connecticut. In addition to his role as a faculty member, Dr. Ellis has served for more than 3 years as a temporary Program Director at the National Science Foundation (NSF), Biological Sciences Directorate, Division of Integrative Organismal Systems (IOS) and Division of Biological Infrastructure (DBI). During his current rotation at NSF, Dr. Ellis is one of the managing program directors in the IOS Processes, Structures and Integrity program in the Physiological and Structural Systems Cluster. His research over the last 20 years has focused on the endocrine control and histologic aspects of prepubertal development of the mammary gland in agriculturally important species. He has authored or co-authored more than 30 journal articles and several book chapters. Dr. Ellis is currently an Associate Editor for the *Journal of Animal Science* and has previously served on the editorial board for the *Journal of Dairy Science*.





## **DR. KARL GLASENER**

Karl Glasener, a soil scientist, has served as the Washington, DC-based Director of Science Policy for the American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America since 1998. Karl provides recommendations on science policy initiatives worthy of attention and support by the Societies and guidance on the appropriate role of the Societies in science policy leadership, support, liaison, and networking. Responsibilities include: tracking policy issues related to agricultural research, food and agricultural systems, natural resources, and the environment; keeping society officers and program leaders informed of issues that are of importance to Society members; alerting Society officers of opportunities to provide written or oral science-based counsel and analyses to Congress and the Administration; and drafting responses on behalf of the Societies. Prior to taking on science policy issues for ASA, CSSA, and SSSA, Dr. Glasener served as a Congressional Science Fellow on the Senate Agriculture Committee (Senator Richard Lugar, R-IN) where he participated in the development of the Agricultural Research, Extension, and Education Reform Act of 1998.



## **DR. RONNIE GREEN**

Green was raised on a mixed beef, dairy, and cropping farm in southwestern Virginia. He received B.S. and M.S. degrees in animal science from Virginia Tech and Colorado State University, respectively. His Ph.D. program was completed jointly at the University of Nebraska and the USDA U.S. Meat Animal Research Center in animal breeding and genetics.

Green has served on the animal science faculties of Texas Tech University and Colorado State University. He has been recognized with a number of distinguished local, regional and national teaching and research awards for the work he led with 25 Ph.D. and M.S. students and colleagues in beef cattle breeding and genetics in those positions. From 2003-2008, Green served as the national program leader for animal production research for the USDA's Agricultural Research Service and as the executive secretary of the White House's interagency working group on animal genomics within the National Science and Technology Council. From 2008-2010 he served as senior director of global technical services for Pfizer Animal Health in animal genetics prior to assuming his current position at Nebraska.

Green has published 130 refereed publications and abstracts, 9 book chapters, and 60 invited symposia papers; and delivered invited presentations in 43 U.S. states and 19 countries. He served as president of the National Block and Bridle Club in 1998 and president of the American Society of Animal Science in 2011.



## **DR. DEB HAMERNIK**

Deb Hamernik currently serves as Interim Associate Vice Chancellor for Research and Economic Development and Associate Dean, Agricultural Research Division at the University of Nebraska-Lincoln. She mentors faculty to build interdisciplinary research teams to enhance their competitiveness for extramural funding; administers funding for internal competitive grant programs; provides oversight for research compliance in the Office of Research Responsibility; organizes the annual Research Fair, New Faculty Forum, and Research Fellows Development Program; and provides administrative oversight for Core Research Facilities at UNL. She was the National Program Leader, Animal Physiology at the USDA Cooperative State Research, Education, and Extension Service (CSREES), Program Director for the USDA Biotechnology Risk Assessment competitive grants program, and Program Director for the USDA-CSREES National Research Initiative (NRI) Bovine Genome Sequencing and Porcine Genome Sequencing competitive grants programs.

Hamernik earned a BS in Animal Science from the University of Nebraska-Lincoln, MS in Animal Science from Washington State University, and PhD in Reproductive Physiology from Colorado State University. In 2010, she was elected to the Board of Directors for the American Society of Animal Science and serves as the Recording Secretary.



## **DR. MICHAEL LAIRMORE**

Dr. Michael D. Lairmore, D.V.M., Ph.D., is a scientist who bridges multiple disciplines to address basic questions related to viral causes of cancer. Since 2011, he serves as Professor in the Department of Pathology, Microbiology, and Immunology and Dean of the School of Veterinary Medicine

at the University of California, Davis. He is a board certified veterinary pathologist (American College of Veterinary Pathology – Anatomic Pathology) and veterinary microbiologist (American College of Veterinary Microbiology – Virology and Immunology).

After receiving his DVM degree from the University of Missouri in 1981, he worked as a veterinarian in a dairy practice in New London, Pennsylvania. In 1983, he enrolled in a combined anatomic pathology residency and PhD program at Colorado State University. During his PhD training, he contributed fundamental knowledge of ovine lentiviruses (ovine progressive pneumonia) and developed one of the first animal models of AIDS-associated pediatric pneumonia. Following completion of his graduate and residency training he was appointment as staff microbiologists at the National Centers for Disease Control (CDC) in Atlanta, Georgia. In 1990, Dr. Lairmore was recruited to The Ohio State University (OSU), College of Veterinary Medicine. In 2004 he was selected as a *Distinguished Scholar* by OSU and the following year was selected as a *Fellow of the American Association for the Advancement of Sciences* (AAAS). He was awarded the *Hero of Hope Award by the American Cancer Society* in 2008. He was elected as a member of the *Institute of Medicine of the National Academies in 2010 and Fellow of the American Academy of Microbiology in 2011..* He has served as primary advisor and mentor for over 25 pre- and post-doctoral students. Before joining the UC Davis School of Veterinary Medicine, he was formerly Professor and Associate Dean for Research and Graduate Studies, College of Veterinary Medicine and Associate Director for Basic Sciences and Shared Resources at The Ohio State University (OSU), Comprehensive Cancer Center. He is former Chair for the Department of Veterinary Biosciences.



## **DR. ARLEN LEHOLM**

Arlen Leholm, executive director of the North Central Regional Association of Agricultural Experiment Stations in Madison, Wis., has conducted research on high-performing teams in the private and public sectors. In 2006, Michigan State University Press published his book, co-written with Raymond Vlasin, "Increasing the Odds for High Performance Teams – Lessons Learned." His work has influenced improvement of Extension, research and client-linked services of other land-grant university Extension systems in the U.S. and India.



## **DR. JIM MCFERSON**

Jim McFerson manages activities with the Washington Tree Fruit Research Commission, a producer-supported organization that provides around 4 million (US\$) annually to support research on apple, cherry, pear, and stone fruit. He also leads an applied research and outreach program with an emphasis on crop load management, tree fruit breeding and genetics, and the efficient production of high quality fruit. After receiving his Ph.D. in Plant Breeding and Genetics from the Univ. of Wisconsin in 1982, he worked as a vegetable breeder with private seed companies. Later he served as Geneticist and Research Leader at the USDA-ARS lab in Geneva, NY, directing efforts in plant genetic resources in a range of fruit and vegetable crops.

After assuming his current responsibilities in 1999, he has taken a leadership role in regional and national industry research groups, including: the National Tree Fruit Technology Roadmap; the Rosaceous Genomics, Genetics, and Breeding Executive Committee; the Tree Fruit Technical Advisory Committee; and the US Apple Research Committee, and the Specialty Crop Farm Bill Alliance. He is an adjunct faculty member of the Dept. of Horticulture at Washington State University.



## **DR. ANDREW NOVAKOVIC**

Andrew Novakovic is the E.V. Baker Professor of Agricultural Economics at Cornell University, where he has been since 1978.

Dr. Novakovic conducts applied research in the field of dairy market economics and is active in educational programs for the dairy industry at both regional and national levels. He also teaches courses in Dairy Markets and Policy, and Agricultural and Food Policy and advises undergraduate students majoring in business at Cornell's C.H. Dyson School of Applied Economics and Management and graduate students in the Field of Food Science.

Beginning in June 2011, Dr. Novakovic served one year in residence as a Senior Economist in the USDA Office of the Chief Economist, whose mission it is to advise the Secretary on agricultural, food, environmental, and trade policy. His part-time appointment with USDA continues through 2014.



## **DR. KATHIE OLSEN**

K. L. Olsen, Ph.D. is the founder and managing director of ScienceWorks, a consulting firm that helps people and organizations succeed in science and engineering research and also an Affiliate Professor of Neuroscience at the Krasnow Institute for Advanced Study, George Mason University. Recognizing the worldwide importance of these fields, ScienceWorks is dedicated to the use of science and technology research as the foundation for innovation, quality of life, and economic vitality.

Before founding ScienceWorks, Dr. Olsen served over 20 years in the federal government in a variety of scientific leadership positions, including the Deputy Director and Chief Operating Officer of the National Science Foundation (NSF); Associate Director and Deputy Director for Science in the Office of Science and Technology Policy (OSTP) in the Executive Office of the President; and Chief Scientist for the National Aeronautics and Space Administration (NASA) and the Acting Associate Administrator for NASA's Biological and Physical Research Enterprise. She also was the Vice President, International Programs at the Association of Public and Land-grant Universities (APLU), a non-profit organization.

Dr. Olsen earned a B.S. in Biology and Psychology with honors from Chatham College and Ph.D. in Biology (Neuroscience) from the University of California, Irvine. Her Postdoctoral Fellowship was in the Department of Neuroscience at Children's Hospital of Harvard Medical School. At various times in her early professional career, Dr. Olsen also served as a Research Scientist at the State University of New York – Stony Brook's Long Island Research Institute and Assistant Professor in the Department of Psychiatry and Behavioral Science at the Medical School, as well as Adjunct Associate Professor in the Department of Microbiology at the George Washington University. Her research on neural and genetic mechanism underlying development and expression of behavior was supported by the National Institutes of Health.

Dr. Olsen holds numerous awards from foreign entities, including the Norwegian Royal Order of Merit; government agencies, institutions, and scientific societies. She is an elected Fellow of the American Association for the Advancement of Science and the Association for Women in Science, and an elected member of the Explorers Club and Cosmos Club. Dr. Olsen is presently serving on several Boards and Society Committees. She has been awarded four honorary doctoral degrees.





## **DR. LARRY REYNOLDS**

Dr. Reynolds joined NDSU in 1985 after a postdoctoral fellowship in nutrition at the US Meat Animal Research Center (US Department of Agriculture) in Clay Center, NE, and a PhD in Reproductive Physiology at Iowa State University.

Dr. Reynolds' research focuses on how various maternal 'stressors' (malnutrition, age, genotype, multiple fetuses, in vitro fertilization, cloned embryos, etc.) alter placental development and thereby affect health and well-being of the fetus and offspring. He also is on the faculty and Co-Director of the Frontiers in Reproduction advanced summer course at the Marine Biological Laboratory in Woods Hole, MA. In addition, Dr. Reynolds is involved with national efforts to highlight the importance of farm animal research to agriculture and also as biomedical models.

Dr. Reynolds has taught more than 20 different undergraduate and graduate courses in cell biology, endocrinology, growth biology, and reproductive biology, and mentored more than 35 undergraduate research interns, 13 graduate students, and 15 postdoctoral fellows, visiting scientists and faculty. He has co-organized and/or spoken at 28 national/international meetings, and held 15 Visiting Professorships and Keynote Speakerships throughout the US and the world. Dr. Reynolds' publications have been cited more than 4,600 times by more than 2,500 articles (Web of Science, ISI Web of Knowledge). From 2005 to 2008, Dr. Reynolds served as Editor-in-Chief of the *Journal of Animal Science*, the world's top-ranked Animal Science journal.



## **DR. MAX ROTHSCHILD**

Max Rothschild is a CF Curtiss Distinguished Professor in Agriculture and Life Science and holds the ME Ensminger Chair in International Animal Agriculture.

Rothschild received his B.S. in animal science at the University of California, Davis in 1974 and his M.S. at the University of Wisconsin in animal science in 1975. In 1978 he obtained his Ph.D. in animal breeding from Cornell University. From 1978 to 1980 he was an assistant professor at the University of Maryland. In 1980 he joined the Department of Animal Science at the Iowa State University. Since 1993 Rothschild has served as the USDA Pig Genome Mapping Coordinator. In 2007 he was named director of the Center for Integrated Animal Genomics. He has presented numerous invited papers in nearly 50 countries and has over 330 referred publications, 500 other publications and 12 patents. His awards include AAAS fellow, USDA Group Honor Award, ASAS award in Animal Breeding and Genetics and the ASAS International Service award, two R&D100 awards and was named Iowa Inventor of the year in 2002. From 2011-2012 Rothschild was a Jefferson Science fellow working at the US Agency for International Development.



## **RYAN RUPPERT**

Ryan Ruppert is the Senior Director of Quality Assurance Programs for the National Cattlemen's Beef Association. His responsibilities are to lead, manage, and innovate the beef industry's Beef Quality Assurance initiative to educate beef cattle and dairy producers on the latest scientifically sound management practices that help keep the United States beef supply safe and wholesome. Ryan has worked in many areas of the beef industry from the ranch to the processing facility. He received his Masters in Animal Breeding and Genetics at Colorado State University and also runs cattle with his father and brother on their family ranch that has been in his family for 6 generations in western Nebraska.



## **DR. PAUL SUNDBERG**

Dr. Paul Sundberg is the National Pork Board's Vice President of Science and Technology. Prior to becoming Vice President on the National Pork Board staff, Sundberg was Assistant Vice President of Science and Technology for the National Pork Board. Sundberg joined the National Pork Producers Council in 1994 as Director of Veterinary Issues. Prior to assuming his position at NPPC, he spent nine years in private practice as owner of a veterinary clinic in Madison, Nebraska. In 1990, he left the practice to pursue further education.

Dr. Sundberg attended the University of Nebraska-Lincoln where he earned his bachelor's degree in biology. He completed his veterinary medicine curriculum and master's degree in clinical science/preventive medicine at Iowa State University. He is board certified in the American College of Veterinary Preventive Medicine and is a past-president of the College. He also has a doctorate degree in veterinary microbiology with a specialty in preventive medicine from Iowa State University.

Dr. Sundberg is a member of the American Veterinary Medical Association, the American Association of Swine Practitioners, the Iowa Veterinary Medical Association and the American Society of Microbiology. He is also a member of the Phi Zeta and Gamma Sigma Delta honor societies.

Dr. Sundberg and his wife, Debra, live in Ames, Iowa.



## **DR. ANDREW THULIN**

Andrew Thulin is the department head for the Animal Science Department at Cal Poly. Additionally, Thulin obtained his bachelor's degree in animal science from Cal Poly. Thulin earned his master's and doctorate degrees in nonruminant nutrition from Kansas State University.

Prior to joining Cal Poly in September of 1998, Thulin was manager of Technology Deployment for the Animal Division of Cargill, Inc., for seven years. Prior to joining Cargill, Thulin held a three-way appointment in extension, teaching and research, and served as the state Extension Swine Leader, at Michigan State University, advising to five graduate students, authoring or co-authoring of more than 30 articles and abstracts in refereed journals, 20 experiment station research reports, and numerous invited papers and newsletter articles. Thulin has also served as a member of the Editorial Board of the *Journal of Animal Science*.



## **DR. DAVID WEHNER**

Dr. David Wehner was named Dean of the College of Agriculture at California Polytechnic State University in April 2002. Prior to this appointment, he served as associate dean since 1997, responsible primarily for the operation of the undergraduate program, including curriculum development, student progress, advising and outreach. He has also worked with many of the college's 10 departments on staffing, faculty evaluations and operation issues and has directed the college's Multicultural Agriculture Program Center. He has also been involved with the MESA Agricultural Initiative to introduce agricultural topics into middle and high schools with large numbers of underrepresented students. Before his appointment as associate dean, Wehner served a year in a half-time position as assistant dean, coordinating the college's graduate program and aiding faculty members with research and public service programs. After teaching at the University of Illinois and University of Maryland, Wehner joined the Cal Poly faculty in 1994 as head of the Environmental Horticultural Science Department and a professor of turfgrass science.



## **DR. WILLIAM WELDON**

In his position, Dr. Weldon is responsible for Elanco's global research, development and regulatory operations, as well as Western European Commercial Operations. These areas are responsible for the development and launch of new products and solutions that improve the health, wellness, wellbeing and performance of animals. In Western Europe, he is also responsible for sales and marketing of Elanco products. Since joining Elanco in 1995, he has served in various roles and been involved with teams focused on delivering innovation and introducing new products to market. Prior to Elanco, Bill was assistant professor of animal science at Ohio State University and was a swine nutritionist at Newsham Hybrids USA.



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