

Full name Kenneth David **CASEY**

Title Associate Professor of Air Quality Engineering
Organization Texas A&M AgriLife Research
Postal address 6500 Amarillo Blvd, West, Amarillo, TX 79106
Contact Phone (work) (806) 677-5600
Phone (mobile) (806) 290-5426
Fax (806) 677-5644
E-mail: kdcasey@ag.tamu.edu

Educational Qualifications

Dec 2005 **Ph.D. in Biosystems and Agricultural Engineering**
University of Kentucky, Kentucky, USA
Dissertation: The determination of ammonia emissions from mechanically ventilated poultry houses, an examination of the issues involved

May 1992 **M.S. in Agricultural Engineering**
Clemson University, South Carolina, USA
Thesis: A computer model to evaluate the design of anaerobic lagoons for pig wastes

May 1986 **Graduate Diploma in Information Processing**
University of Southern Queensland, Toowoomba, Queensland, Australia

Apr 1981 **B.Eng. in Agricultural Engineering**
University of Southern Queensland, Toowoomba, Queensland, Australia

Professional Registration

Registered Professional Engineer Queensland, Registration No: 2922.

POSITION and PROFESSIONAL EXPERIENCE

From/To: Sep 2011 - to date

Organization: Texas A&M AgriLife Research, Texas A&M System

Role: Associate Professor of Air Quality Engineering

Major Tasks:

- Plan and conduct research to quantify and characterize air quality from and develop control measures for cattle feedlots, swine facilities and dairies. This research addresses environmental air quality in relation to state and federal policy and industry needs. This work is carried out as a member of a multidisciplinary faculty team drawn from several collaborating agencies which is conducting field research in the Southern Great Plains on odor, particulates and gaseous emissions. Primary areas of research are:
 - Developing inventory estimates of and a mechanistic understanding of greenhouse gas emissions from feedyards
 - Investigation of water usage at high plains dairies to develop inventory estimates and improve usage efficiency.

Appointment: Research (100%)

PAST POSITIONS and EXPERIENCE**From/To:** Aug 2005 to Sep 2011**Organization:** Texas AgriLife Research, Texas A&M System**Role:** Assistant Professor of Air Quality Engineering**Major Tasks:**

- Planned and conducted research to quantify and characterize air quality from and develop control measures for cattle feedlots, swine facilities and dairies. This research addressed environmental air quality in relation to state and federal policy and industry needs.
 - Quantified emissions of ammonia and hydrogen sulfide from beef cattle feedyards
 - Measured emissions of ammonia, hydrogen sulfide, and particulates from open lot dairies in New Mexico
 - As Site Principal Investigator, managed and operated the National Air Emissions Monitoring Study (NAEMS) swine breeder site in Oklahoma (OK4B) where 2 years of continuous emission data for ammonia, hydrogen sulfide, VOCs and particulates were collected as part of a national 15 site study.

From/To: Dec 2001 to July 2005**Organization:** University of Kentucky

Biosystems and Agricultural Engineering

Role: Research Specialist**Major Tasks:**

- Principal researcher of USDA IFAFS funded, Reducing Ammonia Emissions from Poultry Houses by Enhanced Manure and Diet Management project. This project involves the determining ammonia emission rates from four broiler houses at each of two sites in Kentucky. These emission rates are derived from measurements of ammonia concentration in the exhaust air and determinations of ventilation rate.

From/To: July 1995 to Dec 2001**Organization:** Department of Primary Industries

Intensive Livestock Industry Services and Beef Programs

Role: Principal Environmental Engineer**Major Tasks:**

- Project leadership of MRC funded, Feedlot Waste Management project. This major project involved research components investigating odor emissions from beef cattle feedlots and the hydrology of beef cattle feedlots. Key outcomes of this project involved guidance to industry on more appropriate design management for meeting changing environmental requirements in the northern Australian climatic zone.
- Program Manager of the Cattle and Beef Industry Cooperative Research Centre, Feedlot Waste Management Sub-program. As Program Manager, I had responsibility for research and extension programs involving professional and

technical staff at both DPI and the University of New England. Research areas included sustainable land application, waste minimization through ration modification, modeling waste production and value-adding through co-composting.

- Project leadership of PRDC funded, Pig Waste Management Information Packaging project. This project involved the development of waste characteristic estimation software and the integration of this software with other computer models to form a multipurpose computer model on the land application of agricultural wastes for use by designers and regulators.
- Project Leadership of DPI Funded New Initiative Project – Environmentally Responsible Waste Utilization for Intensive Animal Production. In this role, I was responsible for establishing and leading a research group to undertake research and extension on the environmental issues facing the intensive livestock operations. The group included six research professionals comprising agricultural and environmental engineers, environmental and soil scientists, and systems modeler. It was supported by a professional extension officer, three technicians and an administration officer. Key research areas included waste characterization and modeling, sustainable waste utilization with a particular emphasis on phosphorus storage and utilization and odor and gaseous emissions from anaerobic lagoons and other waste treatment facilities.

From/To: May 1992 to July 1995

Organization: Department of Primary Industries
Intensive Livestock Industry Services and Beef Programs

Role: Project Leader/Engineer

Major Tasks:

- Project leadership of PRDC funded, Pig Waste Management Information Packaging project. This project involves the development of waste characteristic estimation software and the integration of this software with other computer models to form a multipurpose computer model on the land application of agricultural wastes for use by designers and regulators.
- Responsible for the technical aspects of assessment of feedlot license proposals. This has involved detailed assessment of effluent management proposals and odor dispersion studies for a number of large feedlots.
- Cooperation with the PRDC funded project on the production of reference books on pig housing and environment control and effluent management in the pig industry. This has involved the provision of extensive material and the writing of a number of chapters.
- Cooperating as a resource engineer to the Meat Chicken Housing project. This project is looking at the design, operation and performance of hybrid ("Tunnel") ventilated meat chicken sheds.
- Project leader of intensive animal housing and environment control project involving a resource engineering role to and coordination of extension efforts on housing and environment with pig extension officers.

- Development of computer database to store and process licensing information on feedlots and proposed feedlots in Queensland. This database has significantly streamlined process of the feedlot licensing system and enables the rapid production of statistics and other information on the feedlot industry in Queensland.

From/To: August 1990 to May 1992

Organization: Department of Primary Industries
Agricultural Engineering Section

Role: Masters Candidate - Clemson University, South Carolina

Major Tasks:

- A computer model to evaluate the design of anaerobic lagoons for pig wastes was the subject of my thesis. A model based on a mass balance approach and empirically derived relationships was developed for use as a design tool. The model is able to predict nutrient concentrations in the lagoon supernatant and sludge. The method of calculating the lagoon activity ratio of the rational design method was also refined to more accurately reflect the rate of decomposition of organic matter at temperatures below 20°C.
- Studies were primarily undertaken in the schools of Environmental Engineering, and Agricultural and Biological Engineering, these covered areas including biological treatment of wastes, land application of wastes, air pollution, and aquatic chemistry.

From/To: July 1981 to August 1990

Organization: Department of Primary Industries
Agricultural Engineering Section

Role: Project Leader/Engineer

Major Tasks:

- Project Leadership of PRDC funded 'The economic effects and solutions of sub-optimal environments in pig housing' project, a three year, \$150,000, multi-organization project. This project involved the recording and analysis of 15 years of pig housing environmental data from 21 sheds. The Auspig pig production model was then utilized in an attempt to calculate a cost of sub-optimal environments.
- Cooperating engineer and Queensland coordinator of an EIRDC and CMRDC funded project on the environmental performance of laying hen and meat chicken housing. This project involved the continuous monitoring of the environment in ten layer and meat chicken sheds in each of four states. The data from this monitoring was then analyzed in an attempt to quantify the performance of different housing systems and management options.
- Resource engineer role for intensive animal housing and environment control. This involved the provision of engineering advice to extension officers and producers, the production of extension material and the coordination of extension efforts on housing, environment control and waste management with pig and poultry extension officers.

PUBLICATIONS

Book Chapters

Casey, K. D., J. R. Bicudo, D. R. Schmidt, A. Singh, S. W. Gay, R. S. Gates, L. D. Jacobson, and S. J. Hoff. 2006. Chapter 1: Air quality and emissions from livestock and poultry production/waste management systems. In *Animal Agriculture and the Environment: National Center for Manure and Animal Waste Management White Papers*. 1-40. J.M. Rice, D.F. Caldwell, F.J. Humenik, eds. St Joseph, Michigan: ASABE Pub. Number 913C0306.

Peer Reviewed Journals

- Todd, R. W., N. A. Cole, R. G. Hagevoort, K. D. Casey, B. W. Auvermann. 2015. Ammonia losses and nitrogen partitioning at southern High Plains open lot dairy. *Atmospheric Environment* 110: 75-83.
- Jerez, S. B., S. Mukhtar, W. Faulkner, K. D. Casey, M. S. Borhan, R. A. Smith. 2013. Evaluation of electrostatic particle ionization and biocurtain™ technologies to reduce air pollutants from broiler houses. *Applied Engineering in Agriculture* 29(6): 975-984.
- Parker, D., J. Ham, B. Woodbury, L. Cai, M. Spiehs, M. Rhoades, S. Trabue, K. Casey, R. Todd, and A. Cole. 2013. Standardization of flux chamber and wind tunnel flux measurements for quantifying emissions from area sources. *Atmospheric Environment* 66: 72-83.
- Todd, R. W., N. A. Cole, D. B. Parker, M. B. Rhoades, and K. D. Casey. 2011. Daily, monthly, seasonal and annual ammonia emissions from southern High Plains cattle feedyards. *Journal of Environmental Quality* 40(4): 1090-1095.
- Todd, R. W., N. A. Cole, K. D. Casey, R. Hagevoort, and B. W. Auvermann. 2011. Methane emissions from southern High Plains dairy wastewater lagoons in summer. *Animal Feed Science and Technology*. 166-167: 575-580.
- Casey, K. D., R. S. Gates, R. C. Shores, E. D. Thoma, and D. B. Harris. 2010. Ammonia emissions from a U.S. broiler house – Comparison of concurrent measurements using three different technologies. *Journal of the Air & Waste Management Association* 60(8): 939-948.
- Parker, D. B., E. A. Caraway, M. B. Rhoades, N. A. Cole, R. W. Todd, and K. D. Casey. 2010. Effect of wind tunnel air velocity on VOC flux from standard solutions and CAFO manure/wastewater. *Transactions of the ASABE* 53(3): 831-845.
- Gates, R. S., K. D. Casey, H. Xin, and R. T. Burns. 2009. Building emissions uncertainty estimates. *Transactions of the ASABE* 52(4): 1345-1351.
- Singh, A., K. D. Casey, W. D. King, A. J. Pescatore, R. S. Gates and M. J. Ford. 2009. Efficacy of urease inhibitor to reduce ammonia emission from poultry houses. *Journal of Applied Poultry Research* 18(1): 34-42.
- Casey, K. D., R. S. Gates, E. F. Wheeler, H. Xin, Y. Liang, A. J. Pescatore, and M. J. Ford. 2008. On-farm fan performance: Implications for ventilation and operating cost. *Journal of Applied Poultry Research* 17(2): 283-295.
- Gates, R. S., K. D. Casey, E. F. Wheeler, H. Xin and A. J. Pescatore. 2008. U.S. broiler ammonia emissions inventory. *Atmospheric Environment* 42(14): 3342-3350.
- Topper, P. A., E. F. Wheeler, J. S. Zajackowski, R. S. Gates, H. Xin, Y. Liang, and K. D. Casey. 2008. Ammonia emissions from two empty broiler houses with built-up litter. *Transactions of the ASABE* 51(1): 215-225.

- Casey, K. D., S. E. Ford, J. W. McClure, Y. Zhang, and R. S. Gates. 2007. Determining fan performance using FANS: An investigation of performance impacts. *Applied Engineering in Agriculture* 23(2): 333-338.
- Redding, M. R., A. Skerman, J. Ritchie, and K. D. Casey. 2007. How effective are broad-scale nutrient mass-balances for determining the sustainability of lot-feed manure application? *Agriculture, Ecosystems & Environment* 120(2-4): 166-178.
- Hudson; N., E. McGahan, K. Casey, S. Lowe, G. Galvin, P. Jeston, M. Dunlop. 2007. Odour emissions from anaerobic piggery ponds. 1: Results of a three season, fourteen-month survey. *Bioresource Technology* 98(10): 1877-1887.
- Hudson; N., K. Bell, E. McGahan, S. Lowe, G. Galvin, K. Casey. 2007. Odour emissions from anaerobic piggery ponds. 2: Improving estimates of emission rate through recognition of spatial variability. *Bioresource Technology* 98(10): 1888-1897.
- Wheeler, E. F., K. D. Casey, R. S. Gates, H. Xin, J. L. Zajaczkowski, P. A. Topper, Y. Liang and A. J. Pescatore. 2006. Ammonia emissions from twelve U.S.A. broiler chicken houses. *Transactions of the ASABE* 49(5): 1495-1512.
- Liang, Y., H. Xin, H. Li, R. S. Gates, E. F. Wheeler and K. D. Casey. 2006. Effect of measurement intervals on estimation of ammonia emissions from layer houses. *Transactions of the ASABE* 49(1): 183-186.
- Liang, Y., H. Xin, E. F. Wheeler, R. S. Gates, J. S. Zajaczkowski, P. Topper, H. Li and K. D. Casey. 2005. Ammonia emissions from U.S. poultry houses: laying hens. *Transactions of the ASAE* 48(5): 1927-1941.
- Pescatore, A. J., K. D. Casey, and R. S. Gates. 2005. Ammonia emissions from broiler houses. *Journal of Applied Poultry Research* 14(3): 635-637.
- Gates, R. S., H. Xin, K. D. Casey, Y. Liang, and E. F. Wheeler. 2005. A method for measuring ammonia emissions from poultry houses. *Journal of Applied Poultry Research* 14(3): 622-634.
- Chinivasagam, H. N., R. J. Thomas, K. Casey, E. McGahan, E. A. Gardner, M. Rafiee, P. J. Blackall. 2004. Microbiological status of piggery effluent from 13 piggeries in the South East Queensland region of Australia. *Journal of Applied Microbiology* 97(5): 883-891.
- Gates, R. S., K. D. Casey, H. Xin, E. F. Wheeler, J. D. Simmons. 2004. Fan Assessment Numeration System (FANS) design and calibration specifications. *Transactions of the ASAE* 47(5): 1709-1715.
- Singh, A., J. R. Bicudo, A. L. Tinoco, I. F. Tinoco, R. S. Gates, K. D. Casey, A. J. Pescatore. 2004. Characterization of nutrients in built-up broiler litter using trench and random walk sampling methods. *Journal of Applied Poultry Research* 13(3): 426-432.
- Hudson, N., K. Casey, S. Melvin, P. Nicholas. 2001. Laboratory investigation of supported permeable organic covers for the management of odour emissions from anaerobic piggery waste ponds. *Water Science and Technology* 44(9): 317-326.
- McGahan, E. J. and K. D. Casey. 1997. "A new unit for defining the size of a pig enterprise for environmental purposes". In: *Proceedings of Manipulating Pig Production VI*, p298, Canberra, ACT. ed P.D. Cranwell. (Australian Pig Science Association: Werribee).

- Casey, K. D., E. A. Gardner and E. J. McGahan. 1995. "Characterisation of piggery anaerobic lagoons in Southern Queensland". In: *Proceedings of Manipulating Pig Production V*, p202, Canberra, ACT. eds D.P Hennessy and P.D Cranwell. (Australian Pig Science Association: Werribee).
- Casey, K. D. 1993. "The importance of manure characteristics in the design of anaerobic ponds for treating pig wastes". In: *Proceedings of Manipulating Pig Production IV*, p261, ed E.S. Batterham. (Australian Pig Science Association: Werribee).

Reviewed Conference Proceedings

- Casey, K. D., and V. K Vaddella. 2013. Greenhouse gas emissions from pen surfaces at Texas High Plains beef feedyards during fall. Proceedings of the 5th Greenhouse Gases & Animal Agriculture Conference (GGAA 2013). *Advances in Animal Biosciences* 4(2): 522. June 23-26, 2013, Dublin, Ireland.
- Casey, K. D., E. L. Cortus, A. J. Heber, A. P. Caramanica. 2012. Ammonia emissions from a pig breeder facility in the Oklahoma Panhandle. In Proc. *Ninth International Livestock Environment Symposium*. ASABE Paper No. ILES12-2245. St Joseph, Mich.: ASABE.
- Casey, K.D., E.L. Cortus, A.P. Caramanica, and A.J. Heber. 2011. Air emissions from a pig breeder facility in the Oklahoma Panhandle. In *Proceedings of the Biennial Conference of the Australian Society for Engineering in Agriculture (SEAg), Sept, 29-30, 2011*, CD-ROM 100-107, Surfers Paradise, Queensland, Australia.: SEAg.
- Todd, R. W., N. A. Cole, K. D. Casey, R. Hagevoort and B. W. Auvermann. 2010. Methane emissions from a southern High Plains dairy wastewater lagoon. In *Proceedings of the Greenhouse Gases and Animal Agriculture Conference. Banff, Canada, Oct, 3-8, 2010*.
- Todd, R. W., N. A. Cole, K. D. Casey, R. Hagevoort, and B. W. Auvermann. 2010. Methane emissions from a New Mexico dairy lagoon system. In *Proceedings of The International Symposium on Air Quality and Manure Management for Agriculture. Dallas, Texas, Sept, 13-15, 2010*. CD-ROM, 10 Pg. St. Joseph, Mich.: ASABE.
- Casey, K. D., A. P. Caramanica, A. J. Heber, and E. L. Cortus. 2009. Establishment and operation of the National Air Emission Monitoring Study site at a pig breeder facility in Oklahoma. In *Proceedings of The 2009 CIGR International Symposium of the Australian Society for Engineering in Agriculture. Brisbane, Queensland, Sept, 13-16, 2009*. CD-ROM, Australia.: SEAg.
- Parker, D. B., N. A. Cole, K. D. Casey, G. Galvin, R. Ormerod, C. S. Paris, E. A. Caraway, M. B. Rhoades. 2009. Wind tunnels vs. flux chambers: area source emission measurements and the necessity for voc and odour correction factors. In *Proceedings of 19th International Clean Air and Environment Conference. Perth, Australia, Sept, 6-9, 2009*. CD-ROM, Olinda, Australia.: CASANZ.
- Casey, K. D., D. B. Parker, M. B. Rhoades, and L. A. McDonald. 2009. Hydrogen sulphide emissions from beef cattle feedlots in Texas. In *Proceedings of 19th International Clean Air and Environment Conference. Perth, Australia, Sept, 6-9, 2009*. CD-ROM, Olinda, Australia.: CASANZ.
- Casey, K. D., A. P. Caramanica, A. J. Heber, and E. L. Cortus, 2009. Establishment and operation of the national air emission monitoring study site at a sow farm in Oklahoma. In *Proceedings of A&WMA's 102nd Annual Conference & Exhibition: Driving Environmental Progress. Detroit, Michigan, June, 16-19, 2009*. CD-ROM, Pittsburgh, Penn.: A&WMA.

- Heber, A. J., B. W. Bogan, Ji-Qin Ni, T. T. Lim, J. C. Ramirez-Dorransoro, E. L. Cortus, C. A. Diehl, S. M. Hanni, C. Xiao, K. D. Casey, C. A. Gooch, L. D. Jacobson, J. A. Koziel, F. M. Mitloehner, P. M. Ndegwa, W. P. Robarge, L. Wang, and R. Zhang. 2008. The national air emissions monitoring study: Overview of barn sources. In *Proceedings of The Eighth International Livestock Environment Symposium (ILES VIII)*. Iguassu Falls, Brazil, September 1-5, 2008. CD-ROM, 8 Pg. St. Joseph, Mich.: ASABE.
- Gates, R. S., K. D. Casey, H. Xin, R. T. Burns, and H. Li. 2008. Uncertainty analysis in animal building aerial emissions measurements. In *Proceedings of The Eighth International Livestock Environment Symposium (ILES VIII)*. Iguassu Falls, Brazil, September 1-5, 2008. CD-ROM, 6 Pg. St. Joseph, Mich.: ASABE.
- Wheeler, E. F., K. D. Casey, R. S. Gates, H. Xin, P. A. Topper, Y. Liang. 2008. Ammonia emissions from USA broiler chicken barns managed with new, built-up, or acid-treated litter. In *Proceedings of The Eighth International Livestock Environment Symposium (ILES VIII)*. Iguassu Falls, Brazil, September 1-5, 2008. CD-ROM, 7 Pg. St. Joseph, Mich.: ASABE.
- Casey, K. D., M. B. Rhoades, D. B. Parker, and L. A. McDonald. 2008. Hydrogen sulfide emission from and concentrations at a Texas beef cattle feedyard. In *Proceedings of A&WMA's 101st Annual Conference & Exhibition: Integrating Science and Sustainability*. Portland, Oregon, June, 24-26, 2008. CD-ROM, Pittsburgh, Penn.: A&WMA.
- Perschbacher-Buser, Z. L., D. B. Parker, K. D. Casey, G. Green, E. A. Caraway, and M. B. Rhoades. 2007. Quantification of ambient p-Cresol concentrations downwind of beef cattle feedyards. In: *Proceedings of International Symposium on Air Quality & Waste Management for Agriculture, Sept 15-19, 2007*, p 6. CD-ROM, Broomfield, CO.: ASABE.
- Wheeler, E. F., R. S. Gates, H. Xin, K. Casey, P. Topper, and Y. Liang. 2007. Ammonia emissions from layer hen and broiler chicken houses in the U.S.A. In: *Proceedings of International Ammonia Conference*. Wageningen, NL, March 18-21, 2007. 178-179. Gert-Jan Monteny and Eberhart Hartung, eds. Wageningen, NL.: Wageningen Academic Publishers.
- Casey, K. D., R. S. Gates, E. F. Wheeler, H. Xin, and Y. Liang. 2007. Quantifying measurement uncertainty for the multi-state broiler ammonia emissions project. In: *Proceedings of International Ammonia Conference*. Wageningen, NL, March 18-21, 2007. 343-344. Gert-Jan Monteny and Eberhart Hartung, eds. Wageningen, NL.: Wageningen Academic Publishers.
- Thoma, E. D., R. C. Shores, D. B. Harris, D. F. Natschke, R. A. Hashmonay, K. D. Casey and R. S. Gates. 2005. Measurement of ammonia emissions from mechanically ventilated poultry houses using multipath tunable diode laser spectroscopy. In *Proceedings of A&WMA's 98th Annual Conference & Exhibition: Exploring Innovative Solutions*. Minneapolis, Minn, June, 21-24, 2005. CD-ROM, Pittsburgh, Penn.: A&WMA.
- Casey, K. D., R. S. Gates, A. Singh, A. J. Pescatore, E. F. Wheeler, H. Xin, and Y. Liang. 2005. The effect of litter management on ammonia emissions from U.S. broiler chicken houses. In *Proceedings of A&WMA's 98th Annual Conference & Exhibition: Exploring Innovative Solutions*. Minneapolis, Minn, June, 21-24, 2005. CD-ROM, Pittsburgh, Penn.: A&WMA.
- Gates, R. S., K. D. Casey, A. J. Pescatore, E. F. Wheeler and H. Xin. 2005. Assessing annual U.S. broiler chicken house emissions. In *Proceedings of A&WMA's 97th Annual Conference & Exhibition: Exploring Innovative Solutions*. Minneapolis, Minn, June, 21-24, 2005. CD-ROM, Pittsburgh, Penn.: A&WMA.

- Casey, K. D., R. S. Gates, E. F. Wheeler, H. Xin, J. L. Zajaczkowski, P. A. Topper and Y. Liang. 2004. Ammonia emissions from Kentucky broiler houses during winter, spring and summer. In *Proceedings of A&WMA's 97th Annual Conference & Exhibition: Sustainable Development: Gearing Up for the Challenge*. Indianapolis, Ind, June, 22-25, 2004. CD-ROM, Pittsburgh, Penn.: A&WMA.
- Casey, K. D., R. S. Gates, E. F. Wheeler, H. Xin, J. L. Zajaczkowski, P. A. Topper and Y. Liang. 2003. Ammonia emissions from Kentucky broiler houses during winter and spring. In *Proceedings of the National Clean Air Conference: Linking Air Pollution Science, Policy and Management*. Newcastle, Australia, November, 23-27, 2003: CASANZ.
- Xin, H., Y. Liang, A. Tanaka, R. S. Gates, E. F. Wheeler, K. D. Casey, A. J. Heber, J.Q. Ni, and H. Li. 2003. Ammonia emissions from U.S. poultry houses: Part I – Measurement system and techniques. In *Proceedings of the Third International Conference on Air Pollution from Agricultural Operations*. Research Triangle Park, NC, October 12-15, 2003. pp 106-115, St. Joseph, Mich.: ASAE.
- Liang, Y., H. Xin, A. Tanaka, S. H. Lee, H. Li, E. F. Wheeler, R. S. Gates, J. S. Zajaczkowski, P. Topper and K. D. Casey. 2003. Ammonia emissions from U.S. poultry houses: Part II – Layer houses. In *Proceedings of the Third International Conference on Air Pollution from Agricultural Operations*. Research Triangle Park, NC, October 12-15, 2003. pp 147-158, St. Joseph, Mich.: ASAE.
- Wheeler, E. F., K. D. Casey, J.S. Zajaczkowski, P. A. Topper, R. S. Gates, H. Xin, Y. Liang, A. Tanaka. 2003. Ammonia emissions from U.S. poultry houses: Part III – Broiler houses. In *Proceedings of the Third International Conference on Air Pollution from Agricultural Operations*. Research Triangle Park, NC, October 12-15, 2003. pp 159-166, St. Joseph, Mich.: ASAE.
- Galvin, G., K. D. Casey, S. Lowe, M. A. Atzeni and E. McGahan. 2003. Spatial variability of odour emissions from anaerobic piggery lagoons in Queensland. In *Proceedings of the Third International Conference on Air Pollution from Agricultural Operations*. Research Triangle Park, NC, October 12-15, 2003. pp 292-302, St. Joseph, Mich.: ASAE.
- Galvin, G., S. Lowe, M. Atzeni, K. Casey and E. McGahan. 2002. The effect of loading rate on odour emissions from anaerobic effluent ponds in south-east Queensland. In *Proceedings of the 4th Queensland Environmental Conference*. Brisbane, Qld, May 30 -3, 2002. CD-ROM, Brisbane, Australia: IEAust.
- Hudson, N. and K. Casey. 2002. Permeable covers, anaerobic ponds and odour management. In *Proceedings of the 4th Queensland Environmental Conference Brisbane, Qld, May 30 -3, 2002*. CD-ROM, Brisbane, Australia: IEAust.
- Casey, K. D., R. S. Gates, E. F. Wheeler, H. Xin, P. A. Topper, J. Smith Zajaczkowski, Y. Liang, A. J. Heber and L. D. Jacobson. 2002. Quality assured measurements of livestock building emissions: Part 4. Building ventilation rate. In *Proceedings of Symposium on Air Quality Measurement Methods and Technology—2002*. CD-ROM, Pittsburgh, Penn.: AWMA.
- Blackall, P. J., H. N. Chinivasagam, K. D. Casey, E. J. McGahan, E. A. Gardner, A. Vieritz, Z. Ristovski, and V. Agranovski, 2001. An evaluation of the effect of flushing with effluent on the bacterial load in the air of Queensland piggeries. In: *Proceedings of the 2001 Queensland Pig Science Seminar*, Murgon. Australasian Pig Institute.

- McGahan, E., P. Jeston, G. Galvin and K. Casey. 2001. Quantifying anaerobic pond odour emissions. In: *Proceedings of the 2001 Queensland Pig Science Seminar*, Murgon. Australasian Pig Institute.
- Casey, K. D., D. S. Barnes and J. M. Potts. 2000. Co-composting feedlot manure and cypress timber residues. In: *Proceedings of the Eighth International Symposium on Agricultural, Animal and Food Processing Wastes*. pp 624-631, Oct 9-11, Des Moines, IA. St. Joseph, Mich.: ASAE.
- McGahan, E. J., K. D. Casey, D. Duperouzel and R. J. Smits. 2000. Validation of waste estimation theory for intensive pig production systems. In: *Proceedings of the Eighth International Symposium on Agricultural, Animal and Food Processing Wastes*. pp 96-102, Oct 9-11, Des Moines, IA. St. Joseph, Mich.: ASAE.
- McGahan, E. J., K. D. Casey, A. S. Skerman and P. J. Nicholas. 2000. A method for siting piggeries based on odour generation, dispersion and impact. In: *Proceedings of the Second International Conference on Air Pollution from Agricultural Operations*. pp 361-368, Oct 9-11, Des Moines, IA., St. Joseph, Mich.: ASAE.
- McGahan, E. J., K. D. Casey, A. S. Skerman, T. A. Streeten and P. J. Nicholas. 1999. Guidelines to determine separation distances for the Queensland pig industry. In: *Proceedings of the 1999 Queensland Pig Science Seminar*, Gatton. Australasian Pig Institute.
- Nicholas, P. J., K. D. Casey and V. H. James. 1999. Redevelopment of the DPI ILEMS forced-choice dynamic olfactometer. In: *Proceedings of the 1999 Queensland Pig Science Seminar*, Gatton. Australasian Pig Institute.
- Atzeni, M. G., K. D. Casey, E. J. McGahan and M. R. Redding. 1997. Using MEDLI to investigate the sustainability of changing piggery production systems. In: *Proceedings of Queensland Pig Science Seminar*, Gatton, QLD. Australasian Pig Institute.
- Casey, K. D. 1995. Computer design model of anaerobic lagoons for pig wastes. In: *Proceedings of the Seventh International Symposium on Agricultural and Food Processing Wastes*. pp 521-531, June 18-20, Chicago, IL, ASAE, 2950 Niles Rd., St. Joseph, MI 49085-9659 USA.

Conference Proceedings, Abstracts and Reports

- Casey, K.D., H.M. Waldrip, R.W. Todd. N.A. Cole. 2014. Greenhouse Gas Emissions from Beef Cattle Feedlot Pen Surfaces in Texas. In: *Proc of ASA, CSSA, & SSSA International Annual Meeting*, Nov 2-5. 2014, Long Beach, CA. [Abstract & Presentation]
- Waldrip, H.M., K.D. Casey, R.W. Todd. N.A. Cole. 2014. Predicting Greenhouse Gas Emissions from Beef Cattle Feedyard Manure. In: *Proc of ASA, CSSA, & SSSA International Annual Meeting*, Nov 2-5. 2014, Long Beach, CA. [Abstract & Poster]
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Professional Membership and Association

- American Society of Agricultural and Biological Engineers [Member since 1981]
- Clean Air Society of Australia and New Zealand [Member since 1996]
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Awards

- Federal Laboratory Consortium for Technology Transfer, Mid Continent Region: Notable Technology Development –Winner (Project Team Member) [2010]
- Texas Environmental Excellence Awards: Agriculture –Winner (Project Team Member) [2010]

- Texas Environmental Excellence Awards: Agriculture –Finalist (Project Team Member) [2009]
- Vice Chancellor’s Award in Excellence – Member of a Research Team “Air Quality: Reducing Feedlot Emissions Team” [2008]
- Pig Research and Development Corporation Scholarship to undertake Master of Science degree at Clemson University, South Carolina, USA. [1991]

Professional and Personal Development

- American Society of Agricultural and Biological Engineers (ASABE), Annual International Meetings (1990, 1991, 2002-2014)
- Air & Waste Management Association (AWMA), Annual Conference & Exhibition (2001, 2004, 2005, 2009)
- Air & Waste Management Association (AWMA), Symposium on Air Quality Measurement Methods and Technology (2002)
- Air & Waste Management Association (AWMA), Climate Change: Impacts, Policy, and Regulation Conference. Herndon, VA. 2013.
- International Union of Air Pollution Prevention and Environmental Protection Associations (IUAPPA) World Congress, Brisbane Australia, 2007.
- Greenhouse Gases & Animal Agriculture Conference, Dublin, Ireland. 2013.
- Greenhouse Gases & Animal Agriculture Conference, Obihiro, Japan. 2001.
- CIGR: International Conference of Agricultural Engineering, Valencia, Spain. 2012.
- CIGR: 18th World Congress, Beijing, China. 2014.
- ASA, CSSA, & SSSA International Annual Meetings, (2013-2014)
- ADSA, ASAS and CSAS Joint Annual Meeting, Kansas City, Missouri. 2014
- American Society of Agricultural and Biological Engineers (ASABE) International Symposium on Air Quality and Manure Management for Agriculture, Dallas, Texas. 2010.
- American Society of Agricultural and Biological Engineers (ASABE) International Conference on Air Pollution from Agricultural Operations, Des Moines, Iowa. 2000.
- American Society of Agricultural and Biological Engineers (ASABE) International Conference on Air Pollution from Agricultural Operations, Research Triangle Park, NC. 2003.
- International Conference on Ammonia in Agriculture: Policy, Science, Control and Implementation, Wageningen, The Netherlands. 2007.
- International Symposium on Gaseous and Odour Emissions from Animal Production Facilities. Horsens, Denmark. 2003.
- Workshop on Agricultural Air Quality: State of the Science, Potomac, MD, 2006.
- Mitigating Air Emissions from Animal Feeding Operations. Des Moines, Iowa. 2008.
- American Society of Agricultural Engineers (ASAE) Seventh International Symposium on Agricultural and Food Processing Wastes. Chicago, IL, 1995.

- Calpuff Training Course. TRC. Boulder, CO. 2011.
- CR1000/Loggernet Training Course. Campbell Scientific, Inc. Logan, UT. 2009.
- GC/Mass Spectroscopy: Fundamentals, Applications, Troubleshooting Short Course. American Chemistry Society. 2006.
- Mathcad Training Course. Mathsoft Engineering & Education, Inc. 2006.
- Texas A&M AgriLife. Emerging Leaders Conference. College Station, TX. 2014.

Grants and Contracts

1. PI on *Nitrous Oxide Emissions from Texas Beef Cattle Feedlots – Reconfiguration of OP-FTIR System to facilitate field research program*. Texas Cattle Feeders Association. \$5,000.
2. PI on *Improving wastewater utilization and water use efficiency in high plains dairies*. Ogallala Aquifer Program. \$58,108.
3. PI on *Modelling wastewater utilization and water use efficiency in high plains dairies*. Ogallala Aquifer Program. \$41,070.
4. Co-PI (PI: Erick Butler) on *Electrocoagulation treatment of feedlot runoff wastewater*. Ogallala Aquifer Program. \$32,941.
5. Co-PI (PI: Nithya Rajan) on *Impacts of biofuel induced land use change on energy, water, carbon and greenhouse gas balances of the Southwestern U.S. Cotton Belt region*. USDA-NIFA Sustainable Bioenergy - Environmental Implications of Direct and Indirect Land Use Change. \$499,930.
6. Co-PI (PI: Robert DeOtte) on *Overcoming impediments to use of water from feedyard runoff retention structure for dust mitigation activities*. Ogallala Aquifer Program. \$75,000.
7. Co-PI (PI: John Sweeten) on *Air Quality: Odor, Dust and Gaseous Emissions from Concentrated Animal Feeding Operations in the Southern Great Plains*. USDA-CREES. \$1,016,193.
8. Co-PI (PI: Robert Hagevoort) on *An environmental reality check: securing critical scientific baseline data on dairy economic, greenhouse gas emission, carbon footprint & water use impacts in NM & the SW through the SGPDC*. USDA-CREES. \$219,087.
9. Co-PI (PI: Robert Hagevoort) on *Producer Driven Dairy Research and Extension Projects in New Mexico and the Southwest through the Southern Great Plains Dairy Consortium*. USDA-CREES. \$325,734.
10. Co-PI (PI: Saqib Mukhtar) on *Evaluation of Electrostatic Particle Ionization (EPI) and BioCurtain (BC) Technologies to Reduce Dust, Odor and other Pollutants from Broiler Houses*. TSSWCB. \$169,624.
11. Co-PI (PI: Galen Erikson) on *Greenhouse gas emissions and nitrogen cycling from beef production systems: Effect of climate, season, and mitigation strategies as well as policy implications*. USDA-NIFA Planning Grant. \$50,000.
12. PI on *National Air Emissions Monitoring Study – Pork Subcontract: OK4B Site*. Agricultural Air Research Council. \$239,425.
13. PI on *Freshwater Usage and Wastewater Utilization at Texas High Plains Open Corral Dairies*. Ogallala Aquifer Program. \$60,000.
14. Co-PI (PI: Robert DeOtte) on *Acquisition of a Global Sizing Velocimeter, Aerodynamic Particle Sizer, and Tethersonde Array to Advance Aerosol Technology Engineering and Science on the High Plains*. NSF - Major Research Instrumentation Program. \$469,671.
15. PI on *Nitrous Oxide Emissions from Texas Beef Cattle Feedlots – Upgrade of Varian 3800 Gas Chromatograph to support field research program*. Texas Cattle Feeders Association. \$6,000.
16. PI on *Peak Water Demand in Texas Beef Cattle Feedlots*. Texas Cattle Feeders Association. \$2,816.

