CURRICULUM VITAE

I. NAME

Christopher K. Tuggle
Department of Animal Science
2255 Kildee Hall
Iowa State University
Ames, Iowa 50011-3150
(515) 294-4252

DATE: January 27, 2016

II. RANK

Professor

III. EDUCATION

Ph.D.- 1986	Biochemistry, University of Minnesota, Laboratory of James A. Fuchs
B.A. - 1981	Chemistry (Honors, ACS-certified), Saint Cloud State University

IV. PROFESSIONAL EXPERIENCE

2013-2018	National Swine Genome Coordinator, NRSP-8, United States Department of Agriculture
2011-2014	Chair and Director of Graduate Studies, Genetics Graduate Major, Iowa State University
2011	Visiting Professor, University of Edinburgh, Scotland, U.K.
2010-2011	National Fulbright Scholar, US-UK Fulbright Commission
2010-2011	Associate Chair, Genetics Graduate Major, Iowa State University
2007-2009	Chair and Director of Graduate Studies, Bioinformatics and Computational Biology Graduate Program, Iowa State University
2005-2007	Associate Chair, Bioinformatics and Computational Biology Graduate Program, Iowa State University
2008-2014, 2001-2004	Visiting Professor, Huazhong Agricultural University, PRC
2001-present	Professor, Department of Animal Science, Iowa State University
1997	Visiting Scientist, Laboratoire de Genetique Cellulaire, INRA, Toulouse, France.
1995-2001	Associate Professor, Department of Animal Science, Iowa State University
1991-1995	Assistant Professor, Department of Animal Science, Iowa State University
1989-1991	Postdoctoral Research Associate, Department of Microbiology, University of Southern California
1987-1989	Postdoctoral Research Associate, Department of Microbiology and Urology, Columbia University
1981-1986	Graduate Research Assistant, Department of Biochemistry, University of Minnesota

V. ISU PERSONNEL RECORD

2011-2014	Chair and Director of Graduate Studies, Genetics Graduate Major, Iowa State University (Associate Chair, 2010-2011)
2007-2009	Chair and Director of Graduate Studies, Bioinformatics and Computational Biology Graduate Program, Iowa State University (Associate Chair, 2005-2007)
2001-present	Professor, Department of Animal Science, 20% Teaching, 80% Research, 0% Extension
1995-2001	Associate Professor, Department of Animal Science, 20% Teaching, 80% Research, 0% Extension
1991-1995	Assistant Professor, Department of Animal Science, 20% Teaching, 80% Research, 0% Extension

VI. PROFESSIONAL ASSOCIATIONS

American Association for the Advancement of Science
American Association of Immunology
American Society of Animal Science
Gamma Sigma Delta
International Society of Animal Genetics
Sigma Xi

VII. AWARDS, HONORS, AND RECOGNITION

2015	Regent's Award for Faculty Excellence, Iowa State University
2014	Election to Fellow, American Association for the Advancement of Science
2014	Gamma Sigma Delta Research Award- Iowa State University Chapter
2014-present	Associate Editor, BMC Genomics
2013	Iowa State University College of Agriculture and Life Sciences Team Award
2012	External Thesis Opponent, Uppsala University (L. Andersson group), Uppsala, Sweden
2012	Bailey Research Career Development Award, Iowa State University
2011	Iowa State University College of Agriculture and Life Sciences Outstanding Achievement in Research Award
2010-present	Member, Editorial Board, Advances in Genomics and Gene Expression
2010-2011	National William J. Fulbright Award to work in Edinburgh, U.K.
2008-2014	Member, International Scientific Advisory Committee, Canadian NSERC-EMBRYOGene project
2006-present	Member, Editorial Board, Mammalian Genome
2006-present	Member, Editorial Board, Animal Biotechnology
2006-2013	Editor, Animal Genetics (Functional Genomics)
2004-2010	Elected Chair, Standing Committee on Comparative and Functional Genomics, International Society for Animal Genetics
2004	Review Panel Member, NIH/NCRR Genotyping Centers Special Emphasis Panel

2002	Review Panel Member, NIH/NIGMS-NSF Special Study Section; "Mathematics in Biology"
2001	Outstanding Researcher Award, American Society of Animal Science, Midwest Region
2000-2004	Elected to Standing Committee on Comparative Mapping, International Society for Animal Genetics
1997	Visiting Scientist Research Award, Institut National de la Recherche Agronomique, Toulouse, France
1996	ISU Foundation Award for Early Achievement in Research
1993- present	Journal Reviewer; Animal Biotechnology, Animal Genetics, Biochimica et Biophysica Acta- Gene Structure and Expression, BMC Genomics, Developmental Dynamics, Gene, Genesis, Genetics Selection Evolution, Genomics, J. Dairy Science, J. Animal Science, Mammalian Genome, Mechanisms of Development, Molecular and Cellular Biology, Physiological Genomics, BMC Genomics, PLosOne,
1991, 1996	Review Panel Member, Animal Molecular Genetics, NRI Competitive Grants Program (USDA)
1987-1990	NIH Postdoctoral Trainee
1986	Biochemistry Graduate Fellowship
1982-1985	NIH Predoctoral Fellow
1977-1981	National Merit Scholar

VIII. RESPONSIBILITIES

A. Teaching and Academic Advising

Advising and Mentoring

Current Advising/Mentoring:
I am currently the major or co-major advisor for three Ph.D. students. I am serving on a total of sixteen POS committees.

Current Students for which I serve as Thesis Advisor or Co-Advisor

Liu, Haibo Ph.D. (Bioinformatics and Computational Biology) expected 2016. Title to be determined.

Powell, Ellis. Ph.D. (Genetics), expected 2017, Title to be determined.

Waide, Emily. Ph.D. (Genetics; with Jack Dekkers), expected 2015 "Molecular and quantitative genetic basis and control of severe combined immunodeficiency and porcine reproductive and respiratory syndrome in pigs".

Postdoctoral/Faculty Mentoring:

I am mentoring two postdoctoral associates currently (Dr. Martine Schroyen, 2012-present; Dr. Kyle Grubbs, 2013-present), and a Visiting Professor, Dr. Jiying Wang of the Shandong Academy of Agricultural Sciences, China.

Since 2008, I have mentored Jason Ross, Assistant Professor of Animal Science, with Michael Spurlock; Dr. Ross obtained tenure as an Associate Professor in 2014. We have met approximately every six months and reviewed both research plans as well as Dr. Ross's Faculty Activity Reports. I write the mentoring report to the Department Chair.

I informally mentored Dr. Geetu Tuteja, Assistant Professor, Department of Genetics, Development and Cell Biology, during late 2014 to mid-2015 as she transitioned an NIH K99 to independent status at ISU.

Undergraduate mentoring:

I am currently mentoring two undergraduates, this is approximately the number I mentor each year. One specific mentoring group was extraordinary-I mentored several undergraduates (a minority student, Yasi Rodriguez, in (Spring 2010), a Freshman Honors student, Ryan Chen (summer 2010), and Megan Bystrom (Fall 2010-Spring 2011)). They worked with me on gene structure predictions and annotations, using new software we have installed here at ISU, in collaboration with the Swine Genome Sequencing Consortium and the Sanger Centre in the U.K. Ryan and Megan were co-authors, as undergraduate students, on the pig genome manuscript in Nature (November 2012) that described this work in my group.

Prior advising/mentoring:

Graduate Degrees Completed for Students as Thesis Advisor

Ph.D.

Nowling, Tamara, Ph.D. (Molecular, Cellular and Developmental Biology), 1997, "Regulatory elements involved in spatial specific expression in the mouse". (Co-Major Advisor: M. Nilsen-Hamilton).
Currently: Assistant Professor, Medical University of South Carolina, Charleston, SC

Heltemes, Lynn, Ph.D. (Microbiology, Immunology, and Preventive Medicine), 1997, "The Oct-2 regulatory gene and immunoglobulin gene expression in chicken". (Co-Major Advisor: S. J. Lamont).
Currently: Research Associate, University of Minnesota

Yu, Tun-Ping, Ph.D. (Animal Science), 1998 "The functional and quantitative analysis of pig PIT-1". (Co-Major Advisor: M. F. Rothschild).
Currently: Research scientist, DNA Landmarks Inc., Quebec, Canada.

Krieger, Karin E., Ph.D. (Interdepartmental Genetics), 2001 "Functional analysis of the Murine Hox a5 gene".
Currently: Manager, Genex Cooperative, Inc. and Cooperative Resources International, Shawano, WI.

Abbott, Matthew, Ph.D. (Interdepartmental Genetics—USDA- National Needs Fellow), 2004. "Role of *Hoxa5* in spinal cord development: Analysis of structural and molecular effects of ectopic HOXA5 expression in transgenic line Hoxa5SV2."
Currently: Professor of Biology, Des Moines Area Community College, Newton, IA

Joksimovic, Milan. Ph.D. (Interdepartmental Genetics). 2005. "Analysis of HOXA5 Expression and Function in Development of the Central Nervous System."
Currently: Assistant Professor, Medical College of Wisconsin, Milwaukee, WI.

Lkhagvadorj, Sender. Ph.D. (Neuroscience) 2010, "Using transcriptional and blood metabolite profiles to understand mechanisms controlling feed efficiency and feed intake in pigs".
Currently: Scientific Program Manager, Therapeutics for Rare and Neglected Diseases group, National Center for Advancing Translational Sciences, National Institutes of Health, Bethesda, MD

Couture, Oliver. Ph.D. (Interdepartmental Genetics—MGET Fellow) 2011. "The use of bioinformatic analysis of microarray data to predict porcine immune response pathways".
Currently: Postdoctoral Research Associate, University of Chicago.

Uthe, Jolita. Ph.D. (Interdepartmental Genetics) 2012. "Analyzing factors involved in genetic variation of porcine response to *Salmonella***."**
Currently: Research Scientist, Advanced Analytical Technologies, Inc., Ames, Iowa.

Knetter, Susie. Ph.D. (Interdepartmental Immunobiology), 2013. "Characterizing the porcine immune response to an environmental and pathogenic challenge: swine barn dust and *Salmonella* infection"
Currently: Post Graduate Research Associate, Iowa State University.

M.S.

Liu, Hsiao-Ching, M.S. (Animal Science), 1995, "Identifying genetic markers on chromosome 7 which are associated with performance traits in pigs. (Co-Major Advisor: M. F. Rothschild).
Currently: Associate Professor, North Carolina State University, Raleigh, NC.

Yu, Tun-Ping, M.S. (Animal Science), 1994, "Cloning and analysis of the swine PIT-1 gene: Use as molecular marker in breeding studies." (Co-Major Advisor: M. F. Rothschild).
Currently: Research scientist, DNA Landmarks Inc., Quebec, Canada.

Stumbaugh, Amber, M.S. (Interdepartmental Genetics), 2001, "Expression and structure of the pig NRAMP gene".
Currently: deceased.

Uthe, Jolita. M.S. (Interdepartmental Genetics), 2005, "Transcriptional Profiling of the porcine response to *Salmonella* infection"
Currently: Research scientist, Advanced Analytical Technologies, Inc., Ames, Iowa

Mpetile, Ziyanda. M.S. (Animal Science), 2014. Effect of divergent selection for residual feed intake on immune system of Yorkshire pigs**.**
Currently: PhD student, South Africa.

I mentored a Visiting Scientist (Dr. Zhenming Gong, PR China) who came to Iowa State University for 12 months (Fall 2009-Fall 2010) to learn functional genomics and bioinformatics technologies.

I mentored another international visitor, Ms. So-hyun Lee, who is a graduate student from Seoul National University. She learned bioinformatics and functional genomics and completed a project to develop and use a cDNA array to investigate expression during conceptus elongation. She stayed in my lab from September 2002-2003. We have published a manuscript on these results (Lee et al., 2005).

I mentored a Visiting Scientist (Dr. Shu-hong Zhao, PR China) who came to Iowa State University to learn genotyping and functional genomics technologies. She was paid by Huazhong Agricultural University where she is an Associate Professor, and stayed for 12 months, July 2000-July 2001. Dr. Zhao was able to return in October 2001 and continued her work for four more years. We published nine manuscripts on her work thus far.

Teaching

Main responsibilities: teach undergraduate genetics (Biol 313, Fall semesters) and a graduate course in genomics (AnS 556, alternate Spring semesters).

As well, as major professor for graduate students, I continuously teach AnS 699, Genet 699, ImBio 699 and/or MCDB 699 sections throughout the year (6-18 credits per semester).

Biol 313
I began teaching this course in Fall 2014, as a section of ~55 students primarily restricted to undergraduates in the Animal Science major. This course is the first undergraduate course in genetics, and as such is an introductory survey of the field of genetics. I include animal science-related examples in this specific section. I am teaching this section again in Fall 2015 with ~58 students.

AnS 350X
I developed this course "Genomics and Its Application to Medicine and Agriculture" and it was taught for the first time Fall 2011 (5 students) and taught a second time to 7 students (Fall 2012). All materials were new as well as the curriculum. I provided 9 computer-based exercises to complement lectures, and brought in 2 guest lecturers.

AnS 556

I had major responsibility in the development of a new team-taught graduate level course in genome analysis (AnS 556X). I developed the course content (70%) and course organization. The course was taught the first time in Spring, 1998 (6 enrolled); was taught again Spring, 2000 (6 enrolled), in Spring 2002 (8 enrolled, 7 completed the course), in 2004 (7 enrolled, nine total in class), in 2008 (12 enrolled, 13 attended class), in 2010 (8 enrolled), in 2012 (10 enrolled, 14 attended) and 2014 (16 enrolled). In all offerings, I was the course instructional leader (70-80% of material was presented by me and I wrote 90% of exams and evaluations).

Additional courses taught:

AnS 452X

I helped develop this new course AnS 452x "Animal Industry and Veterinary Genetics" during Fall 2008. My role is to provide the molecular technical background in 7 lecture/labs, and thus contribute about 15% of the lectures. The course was taught for the first time in Spring 2009 and again in 2010 where I am contributing a larger share of the lectures (three full weeks, 12 contact hours).

AnS 451

I contributed to both the development and the teaching of AnS 451X in Fall 1991. I have had major (>90%) responsibility for this course. AnS 451 has been taught in Fall 1992, Fall 1994 and I completely revamped the curriculum for the Fall, 1999 class. Class size was 13 students in 1991, 15 in 1992, six in 1994, five in 1999, eight in 2000, six in 2001, seven in 2002, and seven in 2004 and 2005.

BCB 691

I taught the Faculty Seminar course for the Bioinformatics and Computational Biology Interdepartmental Major in Fall 2006, 2007. I organized the lecture schedule for the semester, attended all lectures and provided opportunity for student questions at the end of each lecture. Fall 2006: 12 students Fall 2007: 18 students

MCDB 698

I taught one section of Molecular, Cellular and Developmental Biology Interdepartmental Program Student Seminar 1998, 2006. After one lecture on organization of the course and on the makings of a good seminar, the students present their research projects for the semester. Fall 2006: 18 students

Genet 690

I taught one section of Interdepartmental Genetics Student Seminar 2004, 2005, 2006, 2007, 2009. After one lecture on organization of the course and on the makings of a good seminar, the students present their research projects for the semester. Fall 2006: 24 students. Fall 2007: 21 students. Fall 2009: 21 students.

BBMB593/BCB593

I taught this one credit seminar course in conjunction with the 2005 Symposium I chaired, entitled "Integration of Structural and Functional Genomics". Although I organized and performed most of the work involved, I was assisted by Marit Nilsen-Hamilton (BBMB) and Vasant Honavar (CpSci). 2005. A total of 20 students enrolled.

ANS 308/508
I organized the 0.5 credit section of AnS 308/508 on Animal Production in Fall, 1993. I contributed to the teaching of this course module by presenting a lecture on Animal Molecular Genetics (90 minutes) to a total of 29 students (13 live plus five on ICN plus 12 students viewing videotaped lectures). I had the same responsibilities in Spring 94, total of seven students (on-campus only).

ZGBAS 534
I developed the curriculum and taught the 1 credit module in the newly revamped course ZGBAS 534 entitled "Molecular Genetics of Animal Development" in Spring, 1994 with ten lectures of 90 minutes each. A total of 9 students were enrolled.

Other contributions to teaching

Within the AnS department, I have contributed to teaching (1 lecture) in AnS 540 in Spring 2013; (two lectures) in AnS 510 Fall of 2001; (one lecture) in AnS 352, Fall, 1997.

I provide a double-length lecture on transcriptomics to BCB 570 "Systems Biology" each Spring semester (2009, 2010, 2012, 2013). I have provided a lecture on transgenic animal technology in 1997, 1999, 2001, 2003, 2005 and, in 2007, 2009, 2013 and in 2015 a lecture on porcine immunogenomics, to BBMB 615 (Molecular Immunology). I contributed to teaching (two lectures) Genetics 591, "The Science and Controversy of Agricultural Genetically Modified Organisms" Workshop, Spring, 2000.

B. Current Research Projects total > $11 Million across collaborations; PI or direct supervision of ~$4 Million of these funds. (Principal Investigator unless otherwise noted, see co-investigators in section XI)

1. USDA-NIFA 2013-2018 NRSP-8 Swine Genome Coordinator. $320,000.
2. USDA-NIFA 2014–2018. USDA/CSREES Database Coordinator. Co-PI (PI: J. Reecy). $526,400.
3. USDA-AFRI 2011-2016 Improving nutrient utilization and feed efficiency through research and extension to enhance pig industry sustainability and competitiveness. Co-PI (PI: John Patience) $4.79 million.
4. USDA-NIFA 2013-2016 Genetically Improving Resistance of Pigs to PRRS Virus Infection. Co-PI. (PI: J. Dekkers) $2.99 million.
5. NIH 1R24OD019813-01 2015-2019 Expanding the Utility of Severe Combined Immuno-Deficient (SCID) Pig Models. $2.56 million.

C. Service

Animal Science Department:
Chair, Departmental Seminar Committee, 2012-present
Member, Computer Committee, 1999-present

Member, Safety Committee, 1993-present
Member, Kildee Animal Facilities Committee, 1998-2009; Chair (1998-2009)
Organizer, Animal Breeding and Genetics Seminar, 2006
Faculty Advisor, Animal Breeding and Genetics Retreat, 2000
Member, Kildee Addition Committees on: Laboratory Space and Intensive Animal Facilities, 1994
Member, Seminar Committee, 1992, 1993, 1994, 1995, 1996(Chair), 1997, 2012(Chair)
Member, Burroughs Endowment Committee, 1992

Other Departments:
Member, Faculty Search Committee, Genetics, Development and Cell Biology, 2013-2014
Member, Faculty Search Committee, Veterinary Microbiology and Preventive Medicine, 2003-2004
Member, DEO Search Committee, Biochemistry/Biophysics/Molecular Biology Department, 1999
Member, Faculty Search Committee, Food Science and Human Nutrition Department, 1998
Member, Faculty Search Committee, Biochemistry/Biophysics/Molecular Biology Department, 1997

Interdepartmental:
Chair, Interdepartmental Genetics program July 2011- July 2014
Associate Chair, Interdepartmental Genetics program July 2010- June 2011
Chair, BCB Program July 2007- 2009
Member, BCB Supervisory Committee, 2005-2011
Associate Chair, BCB Program July 2005- June 2007
Member, IGM Spring Workshop Organizing Committee, 2006
Member, BCB Admissions Committee, 2004-2006
Co-Director, USDA MGET Training Grant in Bioinformatics, 2000-2006
Member, MCDB Executive Committee, 1994-1998, 2001-2005
Member, IGM Spring Workshop Organizing Committee, 2000
Chair, IGM Spring Workshop, 1996
Member, IGM Supervisory Committee, 1995-1999 (Ex-Officio, 1999-present)
Member, IGM Admissions Committee, 1993-95
Chair, MCDB Spring Seminar Series, 1993
Member, MCDB Recruitment Committee, 1992-93
Member, IGM Recruitment Committee, 1992-93
Member, IGM Organizing Committee, 1992

University:
Member, Presidential Initiative committee on Membership in the National Academies, 2012-present
CALS representative, Graduate College Task Force on Postdoctoral Research Fellow Development, 2012-2013
Member, Radiation Safety Committee, 2009-present
Member, Institutional Animal Care and Use Committee, 2004-2008

Member, Faculty Senate Committee on Facilities and Educational Resources, 1999-2004
Member, High Throughput Sequencing Facility Committee, 1999-present
Member, Biotechnology Council, 1997-2000
Member, Vice Provost's Committee on Basic Animal Research, 1997-1998
Member, Nucleic Acid Facility Oversight Committee, 1991-present

Regional:
Member, NC-1004 Regional Research Project, 2002-present (Secretary 2003-2004; Vice Chair 2004-2005; Chair 2005-2007)
Member, ASAS/ADSA Midwest Section Award Committee. 2001-2003
Member, NC-210 Regional Research Project, 1992-2001 (Secretary, 1994-5; Chair, 1995-6)

National:
Co-Editor, Special Issue of *The ILAR Journal* on large animal models 2014-2015
Member, NRSP-8 Database Coordination Group, 2003-present
Member, National Swine Genome Coordination Committee, 1993-present
Member, NRSP-8 Technical Committee, USDA National Animal Genome Resources program, 1992-present;
Chair, Swine Sub-Committee, NRSP-8 Technical Committee, USDA National Animal Genome Resources program, 1995-1996; 2010-2011

International:
Standing Committee on Comparative Mapping, International Society for Animal Genetics, Member, 2000-2012; Chair, 2004-2010
Editor, *Animal Genetics* (Functional Genomics) Journal, 2006-2013

TECHNICAL ASSISTANCE TO BUSINESS, INDUSTRY, GOVERNMENT AGENCIES OR INDIVIDUALS:

Along with my undergraduate students, I presented an annual demonstration of mouse genetics at the Winter Roosevelt Elementary Science Fair, for six years running--1999-2005 (Roosevelt closed 2005). Approximately 30-60 students observe the informal demonstration and booth each year.

I presented a half-day series of presentations to approximately 300 sixth grade school students at the 34th Annual Outdoor Classroom, Northwest Research Facility, Sept 12, 2001.

I presented a tour and overview lecture on the new Kildee Animal Gene Transfer Facilities to the 1999 Perry High School Biotechnology Class, November 5, 1999.

I presented an overview of the technologies of gene mapping and identification as part of a conference for interested industry personnel entitled "Future Genetics for the Animal Industry" held May 4, 1994 in St. Louis, MO.

I presented an overview of swine gene mapping and identification efforts at ISU as part of a presentation on biotechnology for 18 Forest City community school biotechnology students who were visiting the ISU campus, February 19, 1993, Meat Lab 133.

I began a consultation in 1993 with Universal Gene Labs (International Boar Semen subsidiary) to help them develop techniques to do PCR blood genotyping of their boars. They were able to successfully add this service to their business. I provide consulting to this company on an ad hoc trouble-shooting basis.

CONTRIBUTED PRESENTATIONS, PAPERS OR DISPLAYS (INTERNAL):

I presented a poster describing the Animal Gene Transfer Facility at the 1996 Iowa Biotechnology Association Meeting.

As part of an Office of Biotechnology presentation at the 1993 Farm Bureau Convention, I prepared a display on "What DNA Looks Like"; gathering DNA samples from around campus and preparing them for this display.

I presented a poster describing my work in the Animal Gene Transfer Facility at the Industry Advisory Board for Biotechnology Annual Meeting held on campus June 18, 1992.

IX. PUBLICATIONS

Refereed Journal Articles (reverse chronological order)

Submitted

140. Schroyen, M., C. Eisley, J.E. Koltes, E. Fritz-Waters, I. Choi, J. M. Reecy, P. Liu, J. K. Lunney, R.R.R. Rowland, J.C.M. Dekkers and C. K. Tuggle. 2015. Bioinformatic analyses to screen early host response to PRRS and its correlation to WUR genotype. Submitted November 2015. (in revision)

139. Powell, E.J., J. Cunnick, S. Knetter, E. Waide, J.C.M. Dekkers, C.K. Tuggle. NK cells are intrinsically functional in pigs with Severe Combined Immune Deficiency (SCID) caused by natural mutations in the Artemis gene. Submitted August 2015. (in revision)

138. Grubbs, J., J.C.M. Dekkers, E. Huff-Lonergan, C. K. Tuggle, S. Lonergan. 2015. Identification of serum biomarkers to predict feed efficiency in young pigs. Submitted August 2015. (in revision).

Published

137. Liu, H., N. Yet, D. Nettleton, J.C.M. Dekkers, C.K. Tuggle. Post-weaning blood transcriptomic differences between Yorkshire pigs with divergent residual feed intake phenotypes. 2016. BMC Genomics, 17:73

136. Nguyen, Y., D. Nettleton, H. Liu, and C.K. Tuggle. 2015. Detecting Differentially Expressed Genes with RNA-seq Data Using Backward Selection to Account for the Effects of Relevant Covariates. J. Agricultural, Biological, and Environmental Statistics. Published on-line 1 October 2015. *DOI: 10.1007/s13253-015-0226-1.*

135. Waide, E., J.C.M. Dekkers, J. W. Ross, R.R.R. Rowland, C. R. Wyatt, C. L. Ewen, D.M. Thekkoot, N.J. Boddicker, and C. K. Tuggle. 2015. Not all SCID pigs are created equally: Two independent mutations in *Artemis* gene cause Severe Combined Immune Deficiency (SCID) in pigs. Journal of Immunology 195:3171-9.

134. Schroyen, M., J.P. Steibel, I. Choi, N.E. Raney, J.E. Koltes, C. Eisley, E. Fritz-Waters, J. M. Reecy, J.C.M. Dekkers, R.R.R. Rowland, J. K. Lunney, C. Ernst and C. K. Tuggle. 2015. Whole blood microarray analysis of pigs showing extreme phenotypes after a porcine reproductive and respiratory syndrome virus infection. BMC Genomics 16:516.

133. Bao, H., A. Kommadath, G. Liang, A.S. Arantes, C.K. Tuggle, G.S. Plastow, S.M.D. Bearson, P. Stothard, L.L. Guan. 2015. Genome-wide whole blood microRNAome and transcriptome analyses reveal miRNA-mRNA regulated host response to foodborne pathogen Salmonella infection in swine. Scientific Reports 5:12620.

132. Koltes J.E. *, Fritz-Waters E.*, Eisley C.J., Choi I., Bao, H., Kommadath A., Serão N.V.L., Boddicker N., Abrams S.M., Schroyen M., Loyd H., Tuggle C.K., Plastow G.S., Guan L.L., Stothard P., Lunney J.K., Liu P., Carpenter S., Rowland R.R.R., J.C.M. Dekkers, and J.M. Reecy. 2015. Identification of a putative quantitative trait nucleotide (QTN) in Guanylate Binding Protein 5 for host response to PRRS virus infection. *BMC Genomics*, 16:412. *Co-first authors.

131. Roth, J.A. and C.K. Tuggle. 2015. (Invited paper). Livestock Models in translational medicine. ILAR Journal 56:1-6.

130. Mathew, D.J., E.M. Newsom, J.M. Guyton, C.K. Tuggle, R.D. Geisert, and M. Lucy. 2015. Activation of the Transcription Factor Nuclear Factor-Kappa B in Uterine Luminal Epithelial Cells by Interleukin-1 Beta 2: A Novel Interleukin-1 Expressed by the Elongating Pig Conceptus. Biology of Reproduction 92:107. online before print March 11, 2015, doi: 10.1095/biolreprod.114.126128.

129. Tuggle, C.K. and W.R. Waters. 2015. (Invited Commentary). Tuberculosis-Resistant Transgenic Cattle. Proceedings of the National Academy of Sciences 112:3854-3855, doi: 10.1073/pnas.1502972112.

128. Pilcher, C., C.K. Jones, M. Schroyen, A.J. Severin, J.F. Patience, C.K. Tuggle, J.E. Koltes. 2015.Transcript profiles in longissimus dorsi muscle and subcutaneous adipose tissue: A comparison of pigs with different post-weaning growth rates. J. Animal Science 93:2134-2143.

127. Grubbs, J., C. K. Tuggle, J.C.M. Dekkers, N. Boddicker, Y. Nguyen, E. Huff-Lonergan, D. Nettleton, S. Lonergan. 2015. Investigation of the efficacy of albumin removal procedures on porcine serum proteome profile. J. Animal Science 93:1592-1598.

126. The FAANG Consortium (49 authors, C.K. Tuggle as Co-corresponding Author). 2015. Coordinated international action to accelerate genome to phenome with FAANG, the Functional Annotation of Animal Genomes project. Genome Biology 16:57. doi: 10.1186/s13059-015-0622-4. **Highly Accessed.**

125. Mpetile, Z., J. M. Young, N. K. Gabler, J. C. M. Dekkers, C. K. Tuggle. 2015. Assessing the immune cell profile of Yorkshire pigs divergently selected for residual feed intake. J. Animal Science 93:892-899.

124. Knetter, S.M., S.M.D. Bearson, T.H. Huang, D. Kurkiewicz, M. Schroyen, D. Nettleton, D. Berman, V. Cohen, J. K. Lunney, A. E. Ramer-Tait, M. J. Wannemuehler, C. K. Tuggle. 2015. *Salmonella enterica* serovar Typhimurium-infected pigs with different shedding levels exhibit distinct clinical, peripheral cytokine, and transcriptomic immune response phenotypes. Innate Immunity 21:227–241 [2014 Epub ahead of print] doi:10.1177/1753425914525812.

123. Schroyen, M., and C. K. Tuggle. 2015. Current Transcriptomics Approaches in Pig Immunity Research. (Invited review). Mammalian Genome 26:1-20.

122. Ewen, C.L., A.G. Cino-Ozuna, H. He, M. Kerrigan, J.C.M. Dekkers, C.K. Tuggle, R.R.R. Rowland, and C.R. Wyatt. 2014. Analysis of blood leukocytes in a naturally occurring immunodeficiency of pigs shows the defect is localized to B and T cells. Veterinary Immunology and Immunopathology 162(3-4):174-9.

121. Choi, I., H. Bao, A. Kommadath, A. Hosseini, X. Sun, Y. Meng, P. Stothard, G. S. Plastow, C. K. Tuggle, J. M. Reecy, E. Fritz-Waters, S. M. Abrams, J. K. Lunney and L. Guan. 2014. Increasing gene discovery and coverage using RNA-seq of globin RNA reduced porcine blood samples. BMC Genomics 15:954. doi: 10.1186/1471-2164-15-954.

120. Kommadath A., H. Bao, A.S. Arantes, G.S. Plastow, C.K. Tuggle, S.M.D. Bearson, L.L. Guan, P. Stothard. 2014. Gene co-expression network analysis identifies porcine genes associated with variation in *Salmonella* shedding. BMC Genomics, 15:452. doi: 10.1186/1471-2164-15-452. PubMed PMID: 24912583.

119. Bao, H., A. Kommadath, G.S. Plastow, C.K. Tuggle, L.L. Guan and P. Stothard. 2014. MicroRNA buffering and altered variance of gene expression in response to *Salmonella* infection. PLOS-One 9:e94352, doi: 10.1371/journal.pone.0094352.

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