

## SUNDAY PETERS, Ph.D.

Dept. of Animal Science, Berry College, Mount Berry, GA 30149  
Office: 706-368-6919; Email: speters@berry.edu

## EDUCATION & TRAINING

June 2011 – August, 2012

**Postdoctoral Research Associate**, Department of Animal Science, Department of Biomedical Sciences, Cornell University, Ithaca, NY 14853.

2008 - 2011

**Ph.D. Molecular Biology**. New Mexico State University, Las Cruces, NM, 88003, USA.  
Dissertation: Genome-wide Association Studies of Growth and Fertility in Brangus Heifers. 100pp.

2002 - 2005

**Ph.D. Animal Breeding and Genetics**. University of Agriculture, Abeokuta. Nigeria.  
Dissertation: Variation in Semen Quality, Reproductive and Growth Performance of Artificially Inseminated Strains of Pure and Crossbred Chickens. 213pp.

1997 -2000

**M.S. Animal Breeding and Genetics**. University of Agriculture, Abeokuta. Nigeria.  
Thesis: Genetic Variation in the Reproductive Performance of the Indigenous Chicken and the Growth Rate of its Pure and Half-bred Progeny. 120pp.

1988 -1994

**B.S. - Animal Science**. University of Agriculture, Abeokuta. Nigeria.  
Honor's Project: Strain Differences in Broiler Performance. 120pp.

## PATENTS/TRADEMARKS/INTERLLECTUAL PROPERTY

- ❖ FUNAAB Alpha Improved Chicken with registration number NGGGD-18-02

## PROFESSIONAL DEV. SHORT COURSES & CONTINUING EDUCATION

- 2012 **Statistical Methods for Genome-Enabled Selection** Animal Breeding and Genetics Unit, Department of Animal Science, Iowa State University, Ames, IA, U.S.A, May 6 -10 (Instructors: Daniel Gianola and Gustavo de los Campos).
- 2011 Summer **Institute in Statistical Genetics** (Modules: Bayesian Methods for Genetics, MCMC for Genetics, Mixed Models in Quantitative Genetics, Gene Expression Profiling, Advanced R Programming for Bioinformatics and GWAS Data Cleaning) University of Washington, Seattle, WA. June 13 – July 1.
- 2010 **USDA/NRI/AFRI Annual Investigator Meeting**. Town and Country Hotel, San Diego, California. January 8.

- 2009 **Bayesian-based Genome-wide Association Study, Candidate Gene Identification and Genomic Selection in Livestock Species.** Animal Breeding and Genetics Unit, Department of Animal Science, Iowa State University, Ames, IA, U.S.A, January - June, (Instructors: Dorian Garrick, Jim Reecy and Rohan Fernando).
- 18<sup>th</sup> Annual Growth Factor and Signal Transduction Symposium:** System Biology: Integrative, Comparative and Multiscale Modeling. Iowa State University, Ames, IA. June 11 – 14.
- Use of High-density SNP Genotyping for Genetic Improvement of Livestock.** Animal Breeding and Genetics Unit, Department of Animal Science, Iowa State University, Ames, IA June 1-10.
- Statistical Genetics of Livestock for the Post-Genomic Era** in honor of Prof Daniel Gianola. University of Wisconsin, Madison. May 4 – 6.
- 2007 **John Vercoe Conference on Animal Breeding for Poverty Alleviation** - Harnessing New Science for Greater Impact, Nairobi, Kenya, 6 - 9 November
- 2006 **International Workshop on Biometrics and Research Methods,** University of Cape Town, South Africa, June 25 - July 2.
- 2005 **Analysis of Longitudinal Data.** Pre-Conference Course, 9<sup>th</sup> Biennial Conference of the Sub-Saharan African Network of International Biometric Society, Addis Ababa, Ethiopia. December 12 - 13.
- Teaching and Academic Administration in Nigerian University System.** Workshop organized by the Research and Development Centre (RESDEC), University of Agriculture, Abeokuta, Nigeria. September 13 - 15.
- Scientific Data Management.** Regional training course on scientific data management sponsored by the Technical Centre for Agricultural and Rural Cooperation (CTA) and held at the University of Agriculture, Abeokuta, Nigeria. 7 - 19 March.
- Poultry Breeding and Hatchery Management.** A practical training course organized by University of Agriculture, Abeokuta in collaboration with S & D Farms, Abeokuta, Nigeria. February 14 - 18.
- 2002 **Standard in-vitro Recombinant DNA Technology.** Summer course organized by the Biotechnology Centre, University of Agriculture, Abeokuta, Nigeria in collaboration with Institute of Agriculture (HIA) Ibadan. September 15-28.

#### **AWARDS & HONORS**

- Mary S. & Samuel Poe Carden Award at Berry College for 2022. The award recognizes the highest standards of teaching, scholarship, helpfulness to students and other contributions to the college community.

- Fulbright U.S. Scholar award (India: Fulbright-Nehru Academic and Professional Excellence Award) for 2021-22 Academic Year.
- Annual Biomedical Research Conference for Minority Students (ABRCMS) Judge Travel Award (Covered Conference registration, accommodation, and travel), Phoenix, AZ Nov 1-5, 2017.
- Summer Institute in Statistical Genetics Scholarship (covered tuition, accommodation, and travel), University of Washington, Seattle. 2011.
- Travel Scholarship to attend Gordon Research Conference on Quantitative Genetics and Genomics, Galveston, TX. 2009.
- Graduate Research Assistantship Award, New Mexico State University, Las Cruces. (May 2008 – May 2011)
- CGIAR travel and accommodation grant to attend John Vercoe's Conference on Animal Breeding and Poverty Alleviation, ILRI, Nairobi, Kenya, November 6<sup>th</sup>-9<sup>th</sup>, 2007.
- Ford Foundation's Scholarship International Workshop on Biometrics and Research Methods, University of Cape Town, South Africa, June 25 – July 2<sup>nd</sup>, 2006
- World's Poultry Science Association travel award to attend European Poultry Conference, Verona, Italy. Sept 10 -14, 2006
- World's Poultry Science Association travel award to attend 3<sup>rd</sup> International Ratite Science Symposium and XII World Ostrich Congress, Madrid, Spain, 14 - 16 October 2005.
- CTA travel and accommodation grant to attend CTA-IBS sponsored 9<sup>th</sup> Scientific Conference of the Sub-Saharan Network of International Biometrics Society, Ethiopian Agricultural Research Institute, Addis Ababa, Ethiopia, December 12<sup>th</sup> – 16<sup>th</sup>, 2005.

### **COMPUTER SKILLS**

Software: MS Office, MATLAB, SAS, C++ and R programming

Technical Software Support Skills (A+ Certified) in Window 10 platforms

Operating Systems: Windows, UNIX, Linux, Python and data visualization tools like GGplot.

### **PROFESSIONAL EXPERIENCE**

03/2019 – date	Associate Professor, Berry College, Mount Berry, GA 30149
06/2015 – date	Adjunct Professor, University of Georgia, Athens, GA 30602.
08/2013 – 02/2019	Assistant Professor, Berry College, Mount Berry, GA 30149.
08/2012 – 07/2013	Visiting Assistant Professor, Berry College, Rome, GA 30149.
06/2012 – 08/2013	Postdoctoral Research Associate, Dept. of Animal Science, Department of Biomedical Sciences, Cornell University, Ithaca, NY 14853.
10/2010 – 10/2012	Senior Lecturer, University of Agriculture, Abeokuta, Nigeria.
01/2009 – 06/2009	Visiting Scientist, Iowa State University, Ames, IA, 50010

10/2007 – 10/2010	Lecturer I, University of Agriculture, Abeokuta, Nigeria.
10/2004 – 10/2007	Lecturer II, University of Agriculture, Abeokuta, Nigeria.
10/2001 – 10/2004	Assistant Lecturer, University of Agriculture, Abeokuta, Nigeria.
08/1995 - 07/1996	National Youth Service Corps

### **TEACHING EXPERIENCE**

**Dept of Animal Science, Berry College**

ANS 324 Genetics of Livestock Improvement  
 ANS 327L Reproductive Physiology lab  
 ANS 105 Introduction to Agricultural Science  
 ANS 201 Orientation to Animal Sciences  
 BCC 100 Freshman Seminar  
 ANS 498 Bioinformatics  
 ANS 498 Genetics of Disease Resistance in Domestic Animals  
 ANS 425 Swine and Poultry Production and Management  
 ANS 432 Poultry Systems and Management  
 ANS 431 Swine Systems and Management  
 ANS 120 Introduction to Animal Science

**Dept of Animal and Range Sciences, New Mexico State University (Teaching Assistant)**

ANSC 305 Principles of Genetics  
 ANSC 423 Animal Breeding

**Dept. of Animal Breeding and Genetics, University of Agriculture (Lecturer). Graduate**

ABG 701 Introduction to Genetics and Animal Biotechnology  
 PDA 714 Monogastric Breeding  
 ABG 704 Stock Improvement  
 ABG 703 Quantitative Genetics

**Undergraduate**

AGS 597 Seminar  
 ABG 500 Applied Animal Breeding and Genetics  
 ABG 401 Quantitative Heredity in Animal Breeding and Genetics  
 ABG 501 Method of Animal Experimentation.  
 APH 508 Incubation and Hatchery Management

**Graduate Students Supervised/Co-Supervised (Univ. of Agriculture, Abeokuta, Nigeria)**

Adelodun O. FADARE, PhD

Dissertation Title: Inheritance pattern of coat color and its association with adaptive and productive performance of West African Dwarf sheep in Southwestern Nigeria.

Babatunde M. ILORI, M.S

Thesis Title: Comparative analyses of productive adaptability of pure and crossbred turkeys in humid tropics.

Adelodun O. SANUSI, MS

Thesis Title: Association of coat color with tolerance of West African Dwarf sheep to *Haemonchus contortus* infection

Adeyemi S. ADENAIKE, MS,

Thesis Title: Bioinformatic analyses of casein gene cluster in mammals

Jude T. OGUNNUPEBI, MS

Thesis Title: Genome-wide In-Silico Identification and analysis of cattle GALNT family of genes.  
141pp.

Michael D. OGUNSEKAN, MS

Thesis Title: Genome-wide Computational Analyses of ADAMTS family of genes in cattle  
165pp

Adeyemi S. ADENAIKE, Ph.D

Dissertation: Genetics of Coccidiosis Tolerance and Diversity of Its Positional Candidate genes in Nigerian Local and Exotic Chickens. 177pp.

## **PROFESSIONAL SERVICE & ADMINISTRATIVE EXPERIENCE**

### **Berry College, Mount Berry, GA, USA**

1. Faculty Assembly Representative – Educational Land Management Committee (2015-2019)
2. Faculty Assembly Representative – Center for Teaching Excellence Committee (2015-2017)
3. Faculty Assembly Representative – Writing Across the Curriculum Committee (2015-2017)
4. Faculty Assembly Representative – Endowed Lectureship Committee (2015- 2017)
5. SMNS Representative – International Programs (2016- 2019)
6. Faculty Assembly Representative – Faculty and Staff Benefits Committee (2017-2019)
7. Multicultural and International Students Program Advisory Committee (2018-2020)
8. Faculty Hearing Committee MNS Representative (2019-2020)
9. Faculty Assembly Representative – Academic Council (2020- 2022)
10. Faculty Assembly Representative – Honors Program Committee (2020 -2022)
11. Animal Science Representative – McAllister Hall Museum Committee (2019 – Present)
12. Faculty Assembly Diversity, Equity and Inclusion ad Committee (2020 -2021)
13. President’s Advisory Committee on Diversity Equity and Inclusion (2021 – Present)

### **University of Agriculture, Abeokuta, Nigeria**

1. Member, College Board of Animal Science and Livestock Production (2001 - 2008)
2. Member, Students Welfare and Hostel Management Committee (2002 - 2008)
3. Member, Teaching Farm Management Committee (2001-2003)

4. Member, Pig Management Technical Committee (2001 -2008)
5. Member, Poultry Management and Technical Committee (2001- 2008)
6. Chairman, College Hatchery Committee (2006-2008)
7. Secretary, World's Poultry Science Association-Nigerian Branch (October 2005 - Feb, 2009)
8. Member, Local Organizing Committee, 1<sup>st</sup> Nigerian International Poultry Summit (2005)
9. Member, Publicity and Protocol Sub-committee, 7<sup>th</sup> Annual Conference of Animal Science Association of Nigeria held at the University of Agriculture, Abeokuta, Nigeria (2002)
10. Chairman, Organizing Committee, Open Day of World Poultry Science Association, Nigeria Branch held at the University of Agriculture, Abeokuta in commemoration of World's food day. (16<sup>th</sup> October 2003)

### **Advising**

**Berry College** – Currently advising 38 students.

### **Editorship**

**Guest Editor:** Integrative Omics Technologies and Machine Learning Approaches in Animal Production. Special Issue in ANIMALS –an open access journal by MDPI.

**Co-Guest Editor:** Omics Technologies in Livestock Improvement from Selection to Breeding Decisions. Special Issue in Frontiers in Genetics – Section, Livestock Genomics

**Associate Editor:** Frontiers in Genetics (Livestock Genomics)

**Associate Editor:** Frontiers in Veterinary Science

**Editorial Board Member:** Ruminants (An MDPI Journal)

**Editorial Board Member:** Discover Animals (A journal by Springer Nature)

### **Manuscript Reviewer**

*ANIMAL*

*BMC Genomics*

*BMC Genetics*

*Frontiers in Genetics*

*International Journal of Biometeorology*

*Scientific Report*

*Virology Journal*

*Journal of Thermal Biology*

*Journal of Animal Science*

*Genes and Genomics*

*Journal of Applied Animal Research*

*Livestock Science*

*Molecular Biology Reports*

*Tropical Journal of Animal Health and Production*

*Nigerian Journal of Animal Production*

*Nigerian Journal of Genetics*

*Molecular Genetics and Genomics*

*Poultry Science*

*British Poultry Science*

*Livestock Genomics*

## **GRANT PANEL MEMBERSHIP**

1. USDA-AFRI-NIFA 2022, 2023
2. NSF Reviewer 2023, 2024

## **PROFESSIONAL MEMBERSHIPS**

American Society of Animal Science (ASAS)  
International Biometrics Society (IBS)  
International Society of Animal Genetics (ISAG)

## **GRANTSMANSHIP**

### **ACTIVE SUPPORT**

**Title:** Genomic Selection for milk fatty acids from Canadian Holstein Cows  
**Agency:** Berry College's Faculty Scholarship Grant – Summer Scholarship Stipend  
**Duration:** 05/15/2023 – 08/15/2023  
**Amount:** \$3000.00  
**Role:** Principal Investigator

**Title:** Effect of Gastrointestinal nematodes on the of immune signaling molecules in lactating ewes  
**Agency:** Berry College's Faculty Scholarship Grant  
**Duration:** 03/01/2023 – 06/30/2023  
**Amount:** \$6000.00  
**Role:** Co- Principal Investigator with Dr. Aridany Suarez

**Title:** Study of the effect of weaning stress on expression of innate and adaptive immune genes in foals  
**Agency:** Berry College's Faculty Scholarship Grant  
**Duration:** 03/01/2022 – 06/30/2022  
**Amount:** \$6000.00  
**Role:** Co- Principal Investigator with Dr. Judy Wilson

**Title:** Study of the effect of exercise-induced stress (EIS) on expression of innate and adaptive immune genes in Racing Quarter Horses  
**Agency:** Berry College's Faculty Scholarship Grant  
**Duration:** 03/01/2021 – 06/30/2021  
**Amount:** \$6000.00  
**Role:** Co- Principal Investigator with Dr. Judy Wilson

**Title:** Population Structure, Genetic and Antigenic Diversity of Toxoplasma Gondii in South Africa  
**Agency:** National Research Foundation, South Africa (Grant number 129840)  
**Duration:** 01/01/2021 – 06/30/2023  
**Amount:** \$59,000.00

**Role:** Collaborator

**Title:** Multidisciplinary approach to improving gut health and feed efficiency in ruminants

**Agency:** USDA-NIFA Evans Allen

**Amount:** \$1,008,397.00

**Duration:** 10/01/2020 – 09/3/2023

**Role:** Co-Principal Investigator

**Title:** Comparative Major Histocompatibility Complex Region Diversity in Small Ruminants

**Agency:** Berry College's Faculty Development Grant

**Duration:** 01/01/2020 – 12/31/2020

**Amount:** \$3000.00

**Role:** Principal Investigator

**Title:** DNA methylation marks involved in mastitis and milk production and development of tools for its effective exploitation in improvement breeding.

**Agency:** Agriculture and Agrifood Canada

**Amount:** \$350,000.00

**Duration:** 05/01/2019 – 04/31/2022

**Role:** Co-Principal Investigator

**Title:** Acquisition of a QuantStudio 7 Flex RealTime PCR System for Undergraduate Research and Teaching.

**Agency:** National Science Foundation – Major Research Instrumentation

**Amount:** \$99,645.00

**Duration:** 09/01/2018 – 07/31/2021

**Role:** Co-Principal Investigator

**Title:** Gene expression analysis of growth-related genes in American Quarter Horses

**Agency:** Berry College's Faculty Development Fund

**Duration:** 01/01/2019 – 06/30/2019

**Amount:** \$6000.00

**Role:** Co-Principal Investigator with Judy Wilson

**Title:** Comparative accuracies of genetic values predicted for economically important milk traits in Holstein cows

**Agency:** Berry College's Faculty Development Fund

**Duration:** 06/01/2019 – 08/30/2019

**Amount:** \$5000.00

**Role:** Principal Investigator

**Title:** Genetic Diversity of Eimeria Spp and Genomics of Coccidiosis Tolerance in South African Chickens

**Agency:** National Research Foundation, South Africa (Grant number 112768)

**Duration:** 01/01/2018 – 06/30/2020

**Amount:** \$100,000.00

**Role:** Collaborator

**Title:** Evaluation of cryopreservation techniques of in vitro produced goat embryos

**Agency:** Berry College's Faculty Development Fund

**Duration:** 01/01/2017 – 06/30/2017

**Amount:** \$5975.00

**Role:** Co-Principal Investigator

**Title:** Robust Threshold Model for Genomic Selection

**Agency:** Berry College's Faculty Development Fund

**Duration:** 06/01/2015 – 09/01/2015

**Amount:** \$5000

**Role:** Principal Investigator

**Title:** Genetic diversity of Adamts1: A positional candidate gene for heifer fertility

**Agency:** Berry College's Faculty Development Fund

**Duration:** 11/01/2013 – 07/30/2014

**Amount:** \$2600

**Role:** Principal Investigator

**Title:** A Pilot Gene-Based DNA Test for Heifer Fertility in New York State

**Agency:** USDA-NIFA-Federal Formula Funds

**Duration:** 10/01/2011 – 09/30/2014

**Amount:** \$66,000

**Role:** Collaborator

Molecular analysis of positional candidates identified by whole genome association and pilot DNA test for heifer pregnancy.

**Title:** Beef Cattle Improvement Research

**Agency:** Pfizer Animal Health Sponsored Research Agreement

**Duration:** 12/01/2011 – 12/30/2013

**Amount:** \$277,000

**Role:** Collaborator

Utilization of genomics tools for beef cattle improvement, with emphasis on growth and reproduction traits.

## GRANTS UNDER DEVELOPMENT

**Title:** Comparative Phylogenomics of Bovine Heat Shock Protein Genes in the Near East and US

**Agency:** US-Israel Binational Agricultural Research Development Fund

**Amount:** \$300,000

**Role:** Co-Principal Investigator

*De-novo* gene expression profiling of thermoregulatory organs (brain, liver and muscle tissues) and phylogenetic diversity of heat shock protein genes to understand genetic variation and diversity in heat tolerance loci in extant cattle breeds in the Near East (Israel) and the United States.

**Title:** Evolutionary Genomics of Heat Adaptation in *Bovidae* in Africa, Asia and the Americas

**Agency:** NSF-BIO Division of Environmental Biology - Evolutionary Processes Cluster

**Amount:** \$1.5 M

**Role:** Co-Principal Investigator

Use a landscape genomics approach that combines molecular markers and GIS-referenced characteristics to understand the evolutionary genetics of heat adaptation in domestic and wild bovids across the climatic landscapes of Asia, the Americas and Africa. This will contribute to better understanding of mammalian evolutionary biology under global climate change.

### **GRANTS SUBMITTED BUT NOT FUNDED**

**Title:** Identification and Association of Imprinted Genes influencing Bovine Growth

**Agency:** USDA-NIFA-AFRI Foundation Awards

**Duration:** 08/01/2013 – 07/31/2016

**Amount:** \$499,497

**Role:** Collaborator

Use RNA-seq to identify novel and confirm known imprinted genes in multiple tissues from reciprocal crosses of *Bos taurus* x *Bos gaurus* and *Bos taurus* x *Bos gaurus* hybrids to determine parent-of-origin expression based on SNPs between orthologous genes in the parent species and evaluate effects of a subset of carefully selected imprinted genes on growth traits in beef cattle.

**Title:** Molecular Genetic Assessment of Sperm Quality in Bulls

**Agency:** USDA-NIFA-AFRI Foundation Awards

**Duration:** 08/01/2013 – 07/31/2016

**Amount:** \$499,897

**Role:** Collaborator

The aims of this project are to conduct genome-wide association of sperm traits in bulls using the Affymetrix 700K high density SNP panel, profile sperm from low and high fertility bulls and to identify transcriptomic, epigenomic and proteomic biomarkers useful for selection and evaluate sperm fertilization potential using *in-vitro* fertilization assays.

**Title:** ANIMAL HEAT GENE DATABASE: New Database of Heat Stress/Tolerance Genes in Livestock

**Agency:** USDA-NIFA-AFRI Foundation Awards

**Duration:** 08/01/2013 – 07/31/2016

**Amount:** \$499,960

**Role:** Collaborator

This project will identify heat stress/tolerance genes using transcriptomic and proteomics analyses of thermoregulatory organs (skin, muscle, kidney, heart, brain, thyroid and adrenal glands) in heat-adapted *Bos indicus* (Brahman) and cold-adapted *Bos taurus* (Angus) cattle subjected to heat stress. A new database of these genes, linked to other existing genomics resources for use by researchers into genetics/genomics of heat stress and tolerance in livestock will be developed and deployed.

**Title:** Genomics, Proteomics and Economics of Manipulating Bovine Fertility

**Agency:** USDA-NIFA-AFRI Food Security Program

**Amount:** \$2,996,911

**Duration:** 5 years

**Role:** Collaborator

This large 5-year integrated project will harness the power of statistical and functional genomics and proteomics to probe the molecular and cellular correlates of superior fertility of male and female cattle, and deploy economic modeling to develop a decision support system for sustainable U.S. beef and dairy cattle production.

**Title:** Genomics and Proteomics Applications to Characterize Heat Tolerance of Cattle

**Agency:** David R. Atkinson Center for a Sustainable Future, Cornell University

**Duration:** 1 year

**Amount:** \$100,000

**Role:** Research Associate

Transcriptomic and proteomic profiling of cattle under heat stress and incorporation of resulting genomics and proteomics data into bio-energetics models to better understand the biological basis of heat exchange between animals and their environments. The long-term goal of this and follow-up projects is identification and characterization of heat tolerance genes and how the biological properties of these genes influence animal thermal comfort.

**Title:** Identification and Characterization of Imprinted Genes associated with Bovine Growth

**Agency:** USDA-NIFA-AFRI Animal Breeding, Genetics and Genomics Program

**Duration:** 3 years

**Amount:** \$499,978

**Role:** Collaborator

*De-novo* discovery and characterization of imprinted genes in cattle using RNA-Seq, and epigenetics effects on growth over ontogenetic time in beef cattle.

## CONSULTING SERVICES

- 2015 - Global Programs, University of Georgia, Athens, USA – USAID's Feed the Future Livestock Innovation Laboratory Proposal Development.
- 2014 – Department of Animal Breeding and Genetics, Federal University of Agriculture, Abeokuta, Nigeria. PEARLS Proposal to Bill and Melinda Gates Foundation on Development of Improved Chicken for West Africa.

## PUBLICATIONS AND SCHOLARSHIP

**Book/Book Chapters/Contributions**

1. Imumorin, I.G, **Peters, S.O.** and De Donato, M. 2012. Genomic imprinting and imprinted gene clusters in the bovine genome. Invited Book Chapter In: *Livestock Epigenetics* (Hasan Khatib, editor). Pp. 89 – 112. Wiley-Blackwell. ISBN 978-0-04079-5859-9/2012.
2. Adebambo, O.A., Adebambo, A.O., Wheto, M.Y., Kehinde, O.O., Udoh, J.E., **Peters, S.O.** and Adeleke, M.A., 2022. Development of Improved Indigenous Chickens (FUNAAB Alpha) for Smallholder Poultry Production in Nigeria. In *Agricultural*

*Biotechnology, Biodiversity and Bioresources Conservation and Utilization* (pp. 251-276). CRC Press.

3. Adebambo, O.A., Adebambo, A.O., Wheto, M.Y., Olori, V.E. and **Peters, S.O.**, 2022. Biotechnology Applications in Livestock Production. In *Agricultural Biotechnology, Biodiversity and Bioresources Conservation and Utilization* (pp. 277-297). CRC Press.
4. Syed, M.A., De Donato, M., Bhat, B.A., Diallo, A.B. **Peters, S.O.**, eds. (2023). *Omics technologies in livestock improvement: From selection to breeding decisions*. Lausanne: Frontiers Media SA. doi:10.3389/978-2-83251-340-8

### Published Peer Reviewed Articles

5. \*Bresnahan, D.; Catandi, G.D.; **Peters, S.O.**; Fresa, K.J., Maclellan, L.J.; Broeckling, C.; Carnevale E.M.; 2024. Maturation and culture affect metabolomic profile of oocytes and follicular cells in young and old mares. *Front Cell Dev Biol.* 11:1280998. doi: 10.3389/fcell.2023.1280998.
6. \*Catandi, G.D.; Bresnahan, D.; **Peters, S.O.**; Fresa, K.J., Maclellan, L.J.; Broeckling, C.; Carnevale E.M.; 2023. Equine maternal aging affects the metabolomic profile of oocytes and follicular cells during different maturation time points. *Front Cell Dev Biol.* 25;11:1239154. doi: 10.3389/fcell.2023.1239154. PMID: 37818125; PMCID: PMC10561129.
7. \*Malarmathi, M.; Murali, N.; Selvaraju, M.; Sivakumar, K.; Gowthaman, V.; Raghavendran, V.B.; Raja, A.; **Peters, S.O.**; Thiruvenkadan, A.K. 2023. In Vitro Characterization of chIFITMs of Aseel and Kadaknath Chicken Breeds against Newcastle Disease Virus Infection. *Biology*: 12, 919.
8. \***Peters, S.O.**; Kizilkaya, K; Sinecen, M.; Metav, B.; Thiruvenkadan, A.K.; Thomas, M.G. 2023. Genomic Prediction Accuracies for Growth and Carcass Traits in a Brangus Heifer Population. *Animals*: 13, 1272. <https://doi.org/10.3390/ani13071272>.
9. \*Balasundaram, B.; Thiruvenkadan, A.; Murali, N.; Muralidharan, J.; Cauveri, D.; **Peters, S.O.** 2023. Genetic Parameters of Growth Traits and Quantitative Genetic Metrics for Selection and Conservation of Mecheri Sheep of Tamil Nadu. *Animals*: **13**, 454. <https://doi.org/10.3390/ani13030454>.

10. \*Wilson, J.; De Donato, M..Appelbaum, B. Garcia, C.T., **Peters, S.** 2023. Differential Expression of Innate and Adaptive Immune Genes during Acute Physical Exercise in American Quarter Horses. *Animals* **13**: 308. <https://doi.org/10.3390/ani13020308>
11. \*Kannan, A.K., Jaganathan, M., Ramanajam, R, Chinnaondi, B., Ila, S.K, Kizilkaya, K., **Peters, S.O.** 2023. Multi-trait Bayesian analysis and genetic parameter estimates in production characters of Mecheri sheep of India. *Trop Anim Health and Prod* **55**: 8. <https://doi.org/10.1007/s11250-022-03425-y>
12. \*Khattab AS, **Peters SO**, Adenaike AS, Amal El-Sawy A, Safa Sand S, El-Barbary AS, Thiruvenkadan AK. A comparison of several methodologies of selection index for productive and reproductive characteristics in Egyptian buffaloes. 2023. *Trop Anim Health Prod.* **15**;55(3):200. doi: 10.1007/s11250-023-03625-0. PMID: 37188905.
13. \*Ilori, B.M. Akano, K. **Peters, S.O.**, Durosaro, S, Olayiwola, S.F, Oguntade, D.O and Ozoje, M.O. 2022. Growth Description of Pure and Crossbred Turkeys Using Non-Linear Models in Hot and Humid Tropical Environment. *Slovak J. Anim. Sci.* **55**: 1-13. <https://doi.org/10.36547/sjas.775>
14. \*Mortazavi, A.; Ghaderi-Zefrehei, M.; Muhaghegh Dolatabady, M.; Golshan, M.; Nazari, S.; Sadr, A.S.; Kadkhodaei, S.; Imumorin, I.G.; **Peters, S.O.**; Smith, J. An Integrated Bioinformatics Approach to Identify Network-Derived Hub Genes in Starving Zebrafish. *Animals* 2022, **12**, 2724. <https://doi.org/10.3390/ani12192724>
15. \*Akinyemi, M.O.; Finucan, J.; Grytsay, A.; Osaiywu, O.H.; Adegbaju, M.S.; Ogunade, I.M.; Thomas, B.N.; **Peters, S.O.**; Morenikeji, O.B. Molecular Evolution and Inheritance Pattern of Sox Gene Family among Bovidae. *Genes* 2022, **13**, 1783. <https://doi.org/10.3390/genes13101783>
16. \*Mortazavi A, Rashidi A, Ghaderi-Zefrehei M, Moradi P, Razmkabir M, Imumorin IG, **Peters S.O**, Smith J. 2022. Constraint-Based, Score-Based and Hybrid Algorithms to Construct Bayesian Gene Networks in the Bovine Transcriptome. *Animals* .**12**(10):1305. doi: 10.3390/ani12101305. PMID: 35625151; PMCID: PMC9138007

17. \*Manomohan, V.; Ramasamy, S.; Pichler, R.; Nagarajan, M.; Karuppusamy, S.; Krovvidi, S.; Nachiappan, R.K.; **Peters, S.O.**; Periasamy, K. 2022. Assessment of Mutation Drift Equilibrium and the Occurrence of a Recent Genetic Bottleneck in South Indian Zebu Cattle. *Animals*, **12**, 1838. <https://doi.org/10.3390/ani12141838>
18. \*Rajendran, R., Muralidharan, J., Bandeswaran, C., Illa, S.K., Kizilkaya, K., **Peters, S.O.**, and Thiruvenkadan, A.K. 2022. Bayesian estimates of genetic parameters for bodyweights in Mecheri sheep of India. *South African Journal of Animal Science*, **52** (2), 234 -240. <https://dx.doi.org/10.4314/sajas.v52i2.13>
19. \*Khattab, A.S., **Peters, S.O.**, Adenaike, A.S., Sallam, A.M., Atya, M.M. and Heba A.A. 2021. Phenotypic and genetic parameters of productive traits in Rahmani and Romanov sheep and crossbreds. *Journal of Animal Science and Technology* **63**(6):1-12. <https://doi.org/10.5187/jast.2021.e119>
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## Published Abstracts, Posters and Presentations

129. \***Peters, S.O.** 2024. AI in the classroom. Invited presentation to faculty members at the 36<sup>th</sup> Annual CSU Biotechnology Symposium, Santa Clara, CA. January 11-13, 2024.
130. \***Peters, S.O.** 2024. Animal Genomics and AI. Invited presentation at the closing ceremony of the 36<sup>th</sup> Annual CSU Biotechnology Symposium, Santa Clara, CA. January 11-13, 2024.
131. \***Peters S.O.**, Kizilkaya, K, Ibeagha-Awemu, E.M. and Zhao, X. 2023. Genomic Selection for Milk Fatty Acid from Canadian Holstein Cows. Paper Presented at the International Society of Animal Genetics Conference held at Cape Town, South Africa, July 1-7, 2023.
132. \***Peters S.O.**, Thiruvenkadan, A.K, Kizilkaya K, Muralidharan, J and Bandeswaran, C. 2023. Genetic Analysis of Body Weight of Mecheri Sheep using Robust Model. Paper Presented at the International Society of Animal Genetics Conference held at Cape Town, South Africa, July 1-7, 2023.
133. \***Peters S.O.** Arunrao, K.V., Kannan D, Amuta Ramasamy, Thiruvenkadan, A.K. Yakubu A. 2023. Production performance of four lines of Japanese Quail reared under tropical climate conditions of Tamil Nadu, India. Paper Presented at the International Society of Animal Genetics Conference held at Cape Town, South Africa, July 1-7, 2023.
134. \***Peters S.O.** Characterization of Interferon-Inducible Transmembrane (chIFITM) genes in Indian Native Chickens. Fulbright Conference, New Delhi, INDIA, November 14 -17, 2022
135. \***Peters, S.O.** Recent advances in animal biotechnology towards improved food and nutrition security. *Invited Keynote paper presented at the second regional conference on the Role of Biotechnology on Food and Nutrition Security at International Center for Biotechnology, University of Nigeria, Nsukka, NIGERIA, September 28-29, 2022*
136. **Peters, S.O.**, Kizilkaya, K, Sinecen, M, and Thomas, M.G. 2022. Multivariate Application of Artificial Neural Networks for Genomic Prediction. World Congress on Genetics Applied to Livestock Production, Rotterdam, Netherlands, July 3-8, 2022
137. \*Wang, M, Laterriere, M, Dudemaine, P, Bissonette, N., Gagne, D, Roy, J, **Peters, S.O.**, Sirad, M and Ibeagha-Awemu, E.M. 2022. Identification of differential methylation regions as candidate discriminant markers for bovine subclinical mastitis caused by *Staphylococcus aureus*. ASAS-CSAS Annual Meeting, Oklahoma City, Oklahoma, June 26 – 30, 2022

138. \***Peters, S.O.**, Sinecen, M, Kizilkaya, K and Thomas, M.G. 2021. Comparison of Univariate and Multivariate Machine Learning Applications for Genomic Predictions of Growth and Carcass Traits from Brangus Heifers. ASAS-CSAS-SSASAS Annual Meeting and Trade Show, Louisville, KY, July 14-17, 2021.
139. \***Peters, S.O.**, Sinecen, M, Kizilkaya, K and Thomas, M.G. 2020. Comparison of Bivariate Machine Learning and Linear Model for Genomic Prediction with Different Heritability, QTL and SNP Panel Scenarios. ASAS-CSAS-WSASAS Virtual Annual Meeting and Trade Show, July 19-23, 2020.
140. \***Peters, S.O.**, Sinecen, M, Kizilkaya, K and Thomas, M.G. 2019. Univariate genomic prediction with different heritability, QTL and SNP panel scenarios using artificial neural network. ASAS-CSAS Annual Meeting and Trade Show, Austin, Texas, July 8-11, 2019.
141. \***Peters, S.O.**, Sinecen, M, Kizilkaya, K and Thomas, M.G. 2019. Bivariate genomic prediction with different heritability, QTL and SNP panel scenarios using artificial neural network. ASAS-CSAS Annual Meeting and Trade Show, Austin, Texas, July 8-11, 2019.
142. \***Peters, S.O.**, Kizilkaya, K., Mehmet, Y., Garrick, D.J. and Thomas, M.G. 2018. Accuracies of genomic breeding values for growth and carcass traits in Brangus beef cattle using K-means clustering for cross-validation. ASAS-CSAS Annual Meeting and Trade Show, Vancouver, Canada, July 8-12, 2018
143. \***Peters, S.O.**, Kizilkaya, K., Mehmet, Y., Garrick, D.J. and Thomas, M.G. 2018. Robust Bayesian inference based on birth, weaning and yearling data in Brangus beef cattle using normal/independently distributed. ASAS-CSAS Annual Meeting and Trade Show, Vancouver, Canada, July 8-12, 2018
144. \***Peters, S.** Ozoje, M and Kizilkaya K. 2017. Utility of robust mixed models in describing growth of seven strains of chicken using Logistics and Richards growth Functions. 2017 Annual Meeting of Poultry Science Association, Orlando, FL, July 17-20, 2017
145. \***Peters, S.** Ozoje, M and Kizilkaya K. Application of Bayesian robust mixed model in the use of non-linear functions to describe growth of three turkey genotypes. 2017 Annual Meeting of Poultry Science Association, Orlando, FL, July 17-20, 2017
146. \***Peters, S.O.**, Sinecen, M., Gallagher, G.R., Pebworth, L.A., Hatfield, J.S., and Kizilkaya, K. Comparison of linear model and artificial neural network using antler beam diameter and beam length records of white-tailed deer (*Odocoileus virginianus*). 35<sup>th</sup>

International Society for Animal Genetics Conference, Salt Lake City, Utah, July 23-27, 2016.

147. \***Peters, S.O.**, Sinecen, M., Thomas, M.G., Imumorin, I.G and Kizilkaya, K. Genome-enabled prediction of genetic values of growth traits using artificial neural networks. 35<sup>th</sup> International Society for Animal Genetics Conference, Salt Lake City, Utah, July 23-27, 2016.
148. \***Peters, S.O.**, Kizilkaya, K., Garrick, D.J., Fernando, R.L., Imumorin, I.G and Thomas, M.G. Use of Robust Bayesian regression model in genome-wide association study of growth traits in Brangus heifers. Joint Annual Meeting – American Dairy Science Association and American Society of Animal Science, Orlando, FL, July 12-16, 2015.
149. \*Baranzandeh, A. Mohammadabadi, M. Imumorin, I.G., **Peters, S.O.**, Thomas, B.N., Ghaderi-Zefrehei, M and Nezamabadi-Pour., H. Comparative whole-genome analysis of CpG islands in camelids and selected mammalian genomes. Joint Annual Meeting – American Dairy Science Association and American Society of Animal Science, Orlando, FL, July 12-16, 2015.
150. \*Ozoje M. O, **Peters, S. O.** Caires, K.C. and Kizilkaya, K. Growth curve analyses of three turkey genotypes in the hot humid tropics using Bayesian mixed model approach. Joint Annual Meeting – American Dairy Science Association and American Society of Animal Science, Orlando, FL, July 12-16, 2015.
151. \*Adeleke, M. A., Ojo, R.O., **Peters, S.O** and Ozoje, M.O. General and specific combining abilities for reproductive and growth performance of three color variants of Nigerian Indigenous turkeys. Joint Annual Meeting – American Dairy Science Association and American Society of Animal Science, Orlando, FL, July 12-16, 2015
152. \*Gallagher, R.G., McLarty, R.J., **Peters, S.O.**, Barton, E.J., Lalumondier, A.J., Kramer, N.E. and Paryzek, K.M. Habituation of White-Tailed Deer (*Odocoileus virginianus*) in an Urban/Suburban Environment to an Unmanned Aircraft System (UAS) quadcopter. The 16th Wildlife Damage Management Conference, Gatlinburg, TN, March 1-4, 2015.
153. \***Peters, S.O.**, Kizilkaya, K., Garrick, D.J., Fernando, R.L., Reecy, J.M., Imumorin, I.G. and Thomas, M.G. Genome-wide association study of first service conception rate in Brangus heifers using probit, robit and logit models. World Congress on Genetics Applied to Livestock Production, Vancouver, Canada. August 17 – 22. 2014.
154. \*Ozoje, M.O., Durosaro, S.O., Esada, P.E., Sode, F.A and **Peters, S.O.** Sequence Analyses of Bovine PAG-1 Gene. World Congress on Genetics Applied to Livestock Production, Vancouver, Canada. August 17 – 22. 2014

155. \*Kheirabadi, K, **Peters, SO**, Imumorin, IG and Ghaderi-Zefrehei, M. Genetic parameters of milk yield at different somatic cell count levels using multiple-trait random regression in Holsteins. World Congress on Genetics Applied to Livestock Production, Vancouver, Canada. August 17 – 22. 2014
156. \*Takeet, M.I., Fagbemi, B.O., De Donato, M., Yakubu, A., Rudolfo, H.E., **Peters, S.O.**, Wheto, M., and Imumorin, I.G. Differential expression of serum IFN-gamma (IFN- $\gamma$ ), interleukin 10 (IL-10) and cardiac troponin I (cTnI) in natural bovine trypanosomosis. 13th International Congress of Parasitology, Mexico City, August 10 – 15. 2014.
157. \*Ibeagha-Awemu, E.A., **Peters, S.O.**, Imumorin, I.G. and Zhao, X. Genome-wide genotyping-by-sequencing (GBS) and association analysis of saturated and monounsaturated fatty acids in bovine milk identifies novel markers in Canadian Holstein cows. Annual Meeting of the American Society of Animal Science, Kansas City, MO. U.S.A. July 20 - 24. 2014.
158. \***Peters, S.O.**, Kizilkaya, K., Garrick, D.J., Fernando, R.L., Pollak, E.J., Enns, R.M. and Imumorin, I.G. Estimation of genetic parameters for reproductive traits in a multibreed population of beef cattle. Annual Meeting of the American Society of Animal Science, Kansas City, MO.U.S.A. July 20 - 24. 2014.
159. \*Ibeagha-Awemu, E.A., Akwanji, K.A., De Donato, M., **Peters, S.O.**, Imumorin, I.G. and Zhao, X. Genome wide genotyping-by-sequencing (GBS) and association analysis (GBS-GWAS) with bovine milk fatty acids of Canadian Holstein cows: Significant association signals with milk eicosapentanoic (C20:5n3, omega 3) and arachidonic (C20:4n6, omega 6) fatty acids. 22nd International Conference on Plant and Animal Genomes, San Diego, CA. U.S.A. January 11 – 15. 2014.
160. \*Ajayi, O.O., **Peters, S.O.**, Khan, W.A., Mujibi, F.D., Shi, P., Ikoebi, C.O.N., and Imumorin, I.G. Transcriptomic profiling of bovine skin in tropically-adapted indicine and temperate-adapted taurine cattle using RNA-seq. 22nd International Conference on Plant and Animal Genomes, San Diego, CA. U.S.A. January 11 – 15. 2014.
161. \*Bamidele, O., De Donato, M., **Peters, S.O.**, Omitogun, O.G., and Imumorin, I.G. Phylogenetic analysis and tissue expression of putative imprinted bovine ASCL2 gene. 22nd International Conference on Plant and Animal Genomes, San Diego, CA. U.S.A. January 11 – 15. 2014.
162. \*LaMastro, J.N., Khan, W.A., **Peters. S.O.**, Ajayi, O.O., De Donato, M., Bai, W.L. and Imumorin, I.G. 2013. GALNT13, a positional candidate gene on bovine chromosome 2 for heifer pregnancy is only expressed in nervous tissue. Annual Meeting of the American Society of Animal Science, Indianapolis, IN. July 8 - 12. 2013.
163. \***Peters, S.O.**, Kizilkaya, K., Garrik, D.J., Fernando, R.L., Pollak, E.J., De Donato, M., Hussain, T. and Imumorin, I.G. 2013. Multivariate heavy-tailed distribution modeling of residuals in estimation of genetic parameters of carcass traits in beef cattle. *J. Anim. Sci.*

91: E –Suppl. 2 Pg 70. Annual Meeting of the American Society of Animal Science, Indianapolis, IN. July 8 - 12. 2013.

164. \***Peters, S.O.**, Kizilkaya, K., Garrik, D.J., Fernando, R.L., Reecy, J.M., Imumorin, I.G., Silver, G.A. and Thomas, M.G. 2013. Model comparison in genome-wide association study of fertility traits of first service conception and heifer pregnancy in Brangus cattle. J. Anim. Sci. 91: E –Suppl. 2 Pg 393. Annual Meeting of the American Society of Animal Science, Indianapolis, IN. July 8 - 12. 2013.
165. \*Birteeb, P.T., **Peters, S.O.**, Ozoje, M.O. 2013. Factor analysis of biometric traits among the Djallonke sheep of Northern Ghana. J. Anim. Sci. 91: E –Suppl. 2 Pg 295. Annual Meeting of the American Society of Animal Science, Indianapolis, IN. July 8 - 12. 2013.
166. \*Adeleke, M.A., Ojo, R.O., **Peters, S.O.**, and Ozoje, M.O. 2013. General and specific combining abilities for reproductive and growth performance of three color variants of Nigerian indigenous turkeys. J. Anim. Sci. 91: E –Suppl. 2 Pg 293 -294. Annual Meeting of the American Society of Animal Science, Indianapolis, IN. July 8 - 12. 2013.
167. DeAtley, K.L., Thomas, M.G., Fortes, M.R.S., Medrano, J.F., Rincon, G., Islas-Trejo, A., Colgrave, M.L., Ashley, R.L., Silver, G.A., **Peters, S.O.**, Reverter, A., Canovas, A. and Snelling, W.M. 2013. X marks the spot: Region of bovine chromosome X associated with heifer fertility traits in Brangus cattle. J. Anim. Sci. 91: E –Suppl. 2 Pg 535. Annual Meeting of the American Society of Animal Science, Indianapolis, IN. July 8 - 12. 2013.
168. \*Takeet, M.I., Fagbemi, B.O., De Donato, M., Yakubu, A., Rudolfo, H.E., **Peters, S.O.**, Wheto, M., and Imumorin, I.G. 2013. Phylogenetic analysis of Trypanosoma congolense and Trypanosoma vivax detected in naturally infected Nigerian cattle breeds. World Association for the Advancement of Veterinary Parasitology, Perth, Australia, August 25 – 29. 2013.
169. Bamidele, O., Ajayi, O.O., Omitogun, O.G., **Peters, S.O.**, Ajayi, O.O., De Donato, M and Imumorin, I.G. Computational prediction and analysis of CpG Islands and transcription factor binding elements in imprinted gene cluster on bovine chromosome 29. 21<sup>st</sup> International Conference on Plant and Animal Genomes, San Diego, CA. January 12 – 16. 2013.
170. Banabazi, M.H., Ghaderi-Zefrehei, M., Imumorin, I.G., **Peters, S.O.**, De Donato, M. and Javaremi, A.N. Whole Transcriptome Value Index (WTVI): a methodology for integrating functional sequences from RNA-Seq data into animal selection. 21<sup>st</sup> International Conference on Plant and Animal Genomes, San Diego, CA. January 12 – 16. 2013.
171. Adenaike, A.S., **Peters, S.O.**, Imumorin, I.G., Fafiolu, A.O. and Ikeobi, C.O.N. Computational molecular analyses of Kappa casein 3 gene reveal differences between ruminants and non-ruminant mammals. 21<sup>st</sup> International Conference on Plant and Animal Genomes, San Diego, CA. January 12 – 16. 2013.

172. Ogunupebi, J., **Peters, S.O.**, Ozoje, M.O., Yakubu, A., and Imumorin, I.G. Genome-wide identification and analysis of the uridine diphospho N-acetylgalactosaminyltransferase (GALNT) gene family in cattle. 21st International Conference on Plant and Animal Genomes, San Diego, CA. January 12 – 16. 2013.
173. \***Peters, S.O.**, Kizilkaya, K., Thomas, M.G., Fernando, R.L., Garrick, D.J., Reecy, J.M., De Donato, M. and Imumorin, I.G. (2013b). Genome-wide linkage disequilibrium patterns in ten cattle breeds. 21st International Conference on Plant and Animal Genomes, San Diego, CA. January 12 – 16. 2013.
174. Ajayi, O.O., **Peters, S.O.**, Hussain, T., Khan, W.A., De Donato, M. LaMastro, J., Mujibi, F.D. and Imumorin, I.G. Genetic diversity in the N-terminal region of bovine DNAJA1 heat shock protein gene in 15 cattle breeds from Africa, Asia and North America. 21st International Conference on Plant and Animal Genomes, San Diego, CA. January 12 – 16, 2013.
175. Ajayi, O.O., De Donato, M., **Peters, S.O.**, Ikeobi, C.O.N., Mujibi, F.D., and Imumorin, I.G. Computational genome-wide survey of heat tolerance genes in the bovine genome. 21st International Conference on Plant and Animal Genomes, San Diego, CA. January 12 – 16. 2013.
176. De Donato, M., Hussain, T., Ruldolfo, H., **Peters, S.O.**, and Imumorin, I.G. Rapid evolution and divergence of type II MAGE genes in eutherians. 21st International Conference on Plant and Animal Genomes, San Diego, CA. January 12 – 16. 2013.
177. Khan, W-A., Hussain, T., De Donato, M., Ajayi, O.O., **Peters, S.O.** and Imumorin, I.G. Genetic variation in the bovine IWS1 gene. 21st International Conference on Plant and Animal Genomes, San Diego, CA. January 12 – 16. 2013.
178. Simoni, Z.L., Rudolfo, H.E., De Donato, M., Takeet, M.I., **Peters, S.O.**, and Imumorin, I.G. Meta-analysis of trypanosomosis prevalence in livestock in the Americas. Joint ADSA-AMPA-ASAS-CSAS-WSASAS Annual Meeting, Phoenix, AZ. July 15 – 19, 2012.
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*Papers presented/ co-presented since I arrived at Berry College*