

John Killefer

College of Agriculture, Food & Environmental Sciences, South Dakota State University

Education

Oregon State University	Corvallis, OR	June 1990
PhD in Animal Science		
Area of Emphasis: Growth and Development; Minor: Biochemistry		
Hastings College	Hastings, NE	May 1984
Bachelor of Arts in Biology		

List of Academic Positions since Final Degree

2022-Present	Professor with tenure, College of Agriculture, Food and Environmental Sciences, South Dakota State University, Brookings, SD
2018-2022	South Dakota Corn Endowed Dean and Professor, College of Agriculture, Food and Environmental Sciences, South Dakota State University, Brookings, SD
2012-2018	Professor and Head, Department of Animal and Rangeland Sciences, Oregon State University, Corvallis, OR
2011-2012	Professor and Head, Department of Animal Sciences, Oregon State University, Corvallis, OR
2002-2011	Associate Professor and Professor, Meat Science and Muscle Biology Program, Department of Animal Sciences, University of Illinois, Urbana-Champaign.
1994-2002	Assistant Professor and Associate Professor – Nutritional Biochemistry and Physiology, Undergraduate Biochemistry Program Coordinator, Division of Animal and Veterinary Sciences, Executive Member Genetics/Developmental Biology Program, West Virginia University, Morgantown, WV.

Major Leadership Accomplishments as South Dakota Endowed Dean of the College of Agriculture, Food and Environmental Sciences (2018-2022)

1. Completed restructure and renaming of College of Agriculture and Biological Sciences to the current name of College of Agriculture, Food and Environmental Sciences (CAFES).
2. Provide leadership and oversight to the teaching, research and outreach missions of CAFES
 - a. Second largest college undergraduate enrollment at SDSU
 - b. Largest research enterprise at SDSU representing over 40% of university research activity and expenditures
 - c. Ensure the continuity and relevance of a robust and impactful outreach and extension program to serve the citizens of the state and region
3. Home to six departments, three programs, one professional program, SD Agricultural Experiment Station, SDSU Extension, and a state diagnostic laboratory
 - a. The college attracts undergraduate students from 34 states and 5 countries.
 - b. Nimble programs
 - i. Offerings of over 20 majors, 30 Minors and Certificates
 - ii. Programs are routinely revised and new ones introduced to prepare students for the future. Examples of recent new programs:

- Precision Agriculture major – first in the country
 - Wikipan Leadership and Sustainability Certificate
 - Dairy Industry Minor
 - Agriculture and Environmental Law Certificate
 - Natural Resource Law Enforcement major
 - Bioprocessing Major and Certificate
 - Livestock and Animal Products Evaluation Certificate
 - Animal Health Minor
 - Commodity Risk Management Minor
 - Soil Health Management Minor
- iii. Strong Scholarship support – approximately \$2,000,000 annually for all departments combined
4. World class facilities for hands-on learning experiences
- a. CAFES programs are well known among employers for the hands-on experiences that students receive. Examples of recently constructed facilities
 - i. Raven Precision Agriculture Center
 - ii. State Animal Disease Research and Diagnostic Laboratory
 - iii. Facilities for our new Professional Program in Veterinary Medicine
 - iv. Swine Education and Research Facility
 - v. Davis Dairy Plant
 - vi. Cow Calf Unit
 - vii. Local Foods Center
5. Major Development and Construction activities
- a. Fund-raise and construct the Raven Precision Agriculture Center
 - i. \$46.1 M, 123,000 sq. feet, innovation ecosystem
 - ii. Opened August 2021
 - b. Oversight for new BSL3 Animal Disease Research and Diagnostic Lab
 - i. \$63 M state-of-the-art state diagnostic laboratory
 - ii. Opened January 2020
 - c. Construction oversight of the renovation of the “old” diagnostic lab facility
 - i. Expansion of modern research laboratories, and home to the new Professional Program in Veterinary Medicine
 - ii. Completed January 2021
 - d. Secured \$7.5M in state funding for the initiation of a modern Dairy Research and Training Facility to support rapid growth of the dairy industry in SD.
 - e. Secured the largest estate gift in University history that endows multiple positions/scholarships. Created the largest scholarship program on campus.
 - f. Secured \$6M in state funding to renovate and establish a novel Precision Ranching field station.
 - g. Secured \$1.25M in state funding to establish a multi-institutional research, teaching, outreach and industry facilitated program in Ag Cybersecurity.
 - h. Awarded \$80M federal Climate Smart grant in Precision Livestock Production, largest in university history.
 - i. Secured \$50M through USGS & Army Corp of Engineers to expand MESONET weather monitoring system
6. Launched new Professional (DVM) Program in Veterinary Medicine in partnership with the University of Minnesota College of Veterinary Medicine
- a. Veterinary 2+2 program with an emphasis on educating rural, large animal practitioners
 - b. Inaugural Class matriculated in Fall 2021
7. Brought Extension and Research activities under one roof in Rapid City, SD through

- purchase of a facility to establish the home for SDSU West River Research and Extension in 2019
8. Purchased land and constructed facility to establish the new West River Research Station near Sturgis, SD in 2020
 9. Collaborated on the award of \$20M to build a new Bioprocessing Facility at the SDSU Research Park, 2021
 - a. This is a multi-disciplinary and multi-institution effort
 10. Continue to provide leadership to maintain continuity of operations for the teaching, research and Extension missions of CAFES throughout the Covid-19 pandemic
 11. Completed funding for multiple endowed professorship/chair positions within CAFES
 12. Regular participant in state legislative sessions
 13. Facilitator of DEI efforts in recruitment and retention of students, faculty and staff
 - a. Established the Wizipan Leadership and Sustainability program as a partnership between SDSU/CAFES and the Indian University of North America at the Crazy Horse Memorial
 - b. First Cohort of students in Fall 2020
 - c. Combines coursework in American Indian Studies, Natural Resource Management, Global Food Systems and Leadership
 14. Established the Center of Excellence in Bison Studies
 - a. Partnership with SDSU, National Bison Association, National Buffalo Foundation and the Turner Institute of Ecoagriculture
 - i. Launched September 2020
 - ii. Coordinated through SDSU but will include active participation by researchers and extension faculty from other land-grant universities including 1994 tribal land-grant colleges and universities
 15. Active supporter of professional development and recognition of faculty and staff
 - a. CAFES faculty members have been the recipient of the National USDA Teaching Excellence award in each of the past three years
 - b. NACADA Advising Award
 16. Converted college finance structure from a centralized budget to a Responsibility Centered Model (RCM)

Major Leadership Accomplishments as Head of the Department of Animal and Rangeland Sciences (2011-2017)

1. Completed merger of Departments of Animal Sciences with Rangeland, Ecology and Management to form the Department of Animal and Rangeland Sciences.
 - a. Physical relocation of faculty/staff/students
 - b. Integration of faculty/students/staff, budgets and administration
 - c. Integration of curriculum and research activities
2. Successfully hire 9 Tenure-track faculty + 4 Professor of Practice
 - a. Dairy Production and Management
 - b. Watershed/Riparian Hydrology
 - c. Human-Animal Bond
 - d. Forage-Livestock
 - e. Range: Historic Land Use
 - f. Range-Livestock
 - g. Natural Resources (result of new Legislative package)
3. Initiate and complete construction of Oldfield Animal Teaching Facility (August 2012)
4. Initiate and complete construction of the Hogg Animal Metabolism Building (December 2014)
5. Initiate and complete construction of the Precision Agricultural Systems Center (Fall 2017)
6. Conversion/renovation of OSU Dairy
 - a. Refocused breed selection to match new management system (grazing dairy)

- b. Fund/Implement major facilities improvements at OSU Dairy
- c. Create a new manure management plan for CAFO
- d. Establish major donation of premier Jersey cattle and New Zealand genetics line
- e. Begin milking under a high forage-based management system/robotic parlor coming
7. Complete logging plan activities at Berry Creek Ranch
 - a. Managed concerns with risk assessment surrounding previous military activities at the ranch site
8. Complete realignment of OSU Horse Center
 - a. Refocus equine program towards academic/research interests
 - b. Increase external sources of funding
 - c. Address facilities concerns
9. Right-size OSU Sheep Center
 - a. Refocus program to match teaching/research needs
 - b. Address major deferred maintenance issues
10. Implement Forage/Seed Industry Stakeholder program at Berry Creek Ranch
 - a. Created novel University/Stakeholder forage program
11. Restructuring overall Animal Sciences Farm Units management
 - a. Eliminate 3 existing Unit-manager positions (Dairy, Sheep, Horse)
 - b. Hired overall Farm Superintendent
 - c. Animal Science Farms now managed in a coordinated fashion
 - d. Completed AAALAC accreditation
12. Increase student involvement at Living Laboratories (established new way of viewing our “farms”)
 - a. More student internship/employment opportunities, use by other units/colleges
13. Increased Ecampus (on-line) course offerings and total enrollment
 - a. Doubled Ecampus enrollment
 - i. New Ecampus courses (ANS 121 – Intro. Animal Sciences Bacc Core, ANS 302-Common Diseases of Companion Animals, ANS 320-Principles of Companion Animal Nutrition, ANS 378 – Genetics, RNG 121-Intro. Rangeland Sciences, RNG 341-Rangeland Ecology and Management, RNG 421-Wildland Restoration and Ecology, RNG 442-Rangeland-Animal Relations)
 - b. Initiated development of Ecampus MS Program in Animal Business Management
 - c. Launch an on-line Rangeland Sciences undergraduate degree program (first in nation)
14. Managed Stakeholder and neighbor conversations focused on ongoing changes/modifications associated with a new Departmental Vision
 - a. Dairy redirection
 - b. Public perception and engagement at animal units
 - c. Community/University Emergency Preparedness collaborations
15. Successful promotion and/or tenure of 10 faculty members
16. Taught (50%) ANS 251 and numerous guest lectures
17. Oversee Office/Lab renovations (suite of 4 labs and offices), 2 additional labs started
18. Balanced Departmental budget for first time in many years
 - a. Required extensive realignment of resources and personnel to match the new vision/mission of the Department
19. Co-authored 13 peer-reviewed manuscripts (since 2012).
20. Served on several University and national committees
 - a. University Budgets Committee (chair), Faculty Senate Administrative Appointments Committee (co-chair), Two Dean Search Committees, Associate Vice President Search Committee, Provost and Executive VP Search Committee,

Provost's Administrative Structure and Duties Task Force, National Animal Science Heads Initiative Committee

21. Editor of Journal of Animal Sciences (2009-2013)
22. Supervised and completed one PhD student, and one MS student, served on three completed graduate committees (2 MS and 1 PhD), mentored 2 Postdoctoral Fellows
23. Established Oregon Beef Council Graduate Student Endowment
24. Established \$1 Million teaching/research endowment for department.
25. Established \$2.5 Million endowment to support livestock farms and educational opportunities in cattle production.
26. Established the Dairy Experiential Learning Endowment.
27. Initiate development activities regarding a new Meat Science Laboratory.

Other Professional Employment

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| 1993-1994 | Research Physiologist, USDA/ARS Poultry Research Laboratory, Georgetown, DE |
| 1990-1993 | Research Physiologist/Fellow, Meats Research Unit, Roman L. Hruska, U.S. Meat Animal Research Center, Clay Center, NE. |
| 1986-1990 | Graduate Research Assistant, Department of Animal Science, Oregon State University, Corvallis, OR. |
| 1984-1986 | Research Technician, Roman L. Hruska, U.S. Meat Animal Research Center, Clay Center, NE. |

Honors, Recognitions, and Outstanding Achievements

Fellowships

1. UCLA Work Fellowship, UCLA Symposia on Obesity, Oregon State University (1989).
2. Postdoctoral Fellowship, U.S. Department of Agriculture, Research Physiologist, Meats Research Program, Roman L. Hruska U.S. Meat Animal Research Center, (1990-1993).

Awards and Honors

1. Food Systems Leadership Institute Fellow (Cohort 9, 2013-2015)
2. Oregon Beef Council Hall of Fame, 2014
3. Director of Professional Science Master's Program at Illinois, 2010-2011.
4. ACES Global Academy Fellow, 2007-2011.
5. ACES Global Academy Scholar, 2007.
6. University Liaison, UIUC-Kafkas University, Turkey Collaboration, 2004- present.
7. Incomplete List of Teachers Ranked as Excellent by Their Students, 2003, 2005, 2006, 2007, 2008
8. NRICGP Grants Review Panel. 2002.
9. ACOP/ESCOP Leadership Development Program (Class 10, 2000-2001).
10. West Virginia University Faculty Senator, 2001-2002.
11. Davis-Michael Scholars Program Oversight Committee, Dean's Appointment, 2001-2002.
12. President's Cabinet on Safety and Health, WVU. 2001-2002.
13. West Virginia University Research Cabinet. 2000-2002.
14. Highlighted Researcher WVU Research: President's State of University Address. 2000.
15. Gamma Sigma Delta Officer. 1999-2002.
16. Outstanding Researcher Division of Animal and Veterinary Sciences. 1999.

17. Nominated as the Outstanding Researcher, College of Agriculture and Forestry. 1999.
18. Nominated as WVU Foundation Professor of the Year, West Virginia University. 1999.
19. Recipient of the Outstanding Professor, College of Agriculture and Forestry. 1998.
20. Nominated as the Outstanding Professor, College of Agriculture and Forestry. 1997.
21. Award of Excellence, Research presentation. 1996. Nat. Poultry Science Assoc. Meeting.
22. Selected as 1 of 10 professors from WVU to attend the WV Great Teachers Conf. 1996.
23. Selected as an outstanding professor 1994-95, by the Panhellenic Council.
24. Graduate Student Research Award, Amer. Inst. of Nutr. (Procter and Gamble), 1989.

Honor Societies

1. Gamma Sigma Delta (West Virginia University, 1995).
2. Gamma Sigma Delta (Oregon State University, 1989).

Invited Lectures and Invited Conference Presentations (selected)

National Conferences

1. “Syllabus Swap” Reciprocation Session, AMSA RMC. June, 2010.
2. “Impact of growth promotants on beef and pork quality”, MWASAS, March 2006.
3. “Manipulation of Postnatal Muscle Mass by Embryonic Intervention”, Invited Growth Symposia Speaker, MWASAS, March, 2005.
4. “The Butcher” on the HISTORY CHANNEL. February – March, 2005.
5. “Effect of Enhancement on Pork and Beef on Postmortem Events”, Reciprocation Session, AMSA RMC. June, 2004.
6. “BSE Concerns – Why it is important to your business”, Illinois Association of Meat Processors Convention. February, 2004.
7. “Muscle Biology and Meat Science”, ELANCO Faculty Excellence Program; October, 2003.
8. “Muscle Biology and Meat Science”, External Advisory Committee, 2003.
9. “Prion Research / Chronic Wasting Disease”, External Advisory Committee, 2003.
10. “Ghrelin – A Regulator of Growth and Nutrient Partitioning”, UIUC Nutritional Sciences Seminar. September, 2002.
11. “Animal Genomics”, CASE Media, June, 2002.
12. “Novel Target Discovery in the Era of Genomics”, MERCK and Company, Somerville, NJ, March, 2002.

International Conferences

1. “Application of Immunocastration in the Swine Industry”, Central and Latin American Swine Meeting, Bogota, Columbia. December 7-10, 2010.
2. “Development of the Swine Industry in the USA”, Ministry of Commerce, First Training Session to Key Slaughterhouses. Yichang City, Hubei Province, China, October 14-17, 2010
3. “Effects of increasing lysine level on carcass composition, cutting yields, and further processed product characteristics of immunocastrated male pigs”. Boler, D.D., Kutzler, L.W., Meeuwse, D.M., King, V.L., McKeith, F.K., and Killefer, J. International Congress of Meat Science and Technology. 15-20 August, Jeju Korea, 2010.
4. “Effects of immunization against GnRF on carcass characteristics, pork quality, and further processing characteristics of finishing male pigs (lysine titration study)”. International Swine Nutrition Symposium. Toronto, Ontario, Canada. May 7, 2010.

5. Allerton IV Conference. October, 2008.
6. International Conference of Meat Science and Technology. Baltimore 2005, S. Korea 2010.
7. "Expressed Sequence Tags of Rainbow Trout (*Oncorhynchus mykiss*) Intestine, Kidney and Liver mRNA", Aquaculture Workshop, Plant & Animal Genome IX Conference, San Diego, CA., January, 2001.

Offices Held in Professional Societies

1. MWASAS Outstanding Young Researcher Award Selection Committee, 2006, 2007, 2009.
2. Chair, NC-1131 Project Rewrite Committee. 2008-2009.
3. Chair/Host, NC-1131 meeting. 2007.
4. Secretary, NC-1131 Committee. 2006.
5. Planning Committee, MWASAS Career Fair. 2006.
6. American Meat Science Association, Reciprocal Meats Conference. Chair, Meat Biotechnology-Applications in Pork Quality Session. 2006.
7. Planning/Host Committee, American Meat Science Association, RCM, 2006.

Editorships of Journals or Other Learned Publications

1. Associate Editor, Journal of Animal Science, Animal Products, 2009-2013.
2. Editorial Board, Journal of Animal Science, 2007-present.
3. Ad hoc reviewer for the Journal of Animal Science, Meat Science, American Journal of Physiology, Marine Biotechnology, Animal Genetics, Animal Biotechnology, Gene, Domestic Animal Endocrinology, Journal of Nutrition, Molecular and Cellular Endocrinology, Growth Development and Aging, and Comparative Biochemistry and Physiology, Animal, Journal of Poultry Science.
4. Associate Editor, Poultry Science, 1998-1999.

Total Grant Support

As Faculty: Exceeds eight million dollars from federal, state and private sources.

USDA RAP (1995-97): 200,000 * 2

USDA NRI (1997 – 2000): 250,000/year

US Trout Association (1998-2001): 80,000/year

Private Industry (2002-2011)

Pharmaceutical: \$2,000,000

Food: \$3,200,000

Grain: \$500,000

Energy: \$1,000,000

As Administrator: Exceeds \$140 million as facilitator

USDA: \$50,000

NIH BSNTR: \$10,800,000

USGS/ACE: \$50,000,000

USDA/AFRI: \$80,000,000

Review Panels

1. Panel Member, USDA-TSTAR Grant Program (2009- 2011).
2. Animal Health and Disease Review Panel. (2004).
3. Panel Member, USDA-NRI Grant Program (2003).

Publications and Creative Works

- A. Doctoral Thesis Title: "Characterization and cloning of a cDNA encoding an adipocyte-specific membrane protein"

B. Chapters in Books

1. Koohmaraie, M., J. Killefer, M. Bishop, S.D. Shackelford, T.L. Wheeler, and J.R. Arbona. 1995. Calpastatin-based methods for predicting meat tenderness. In: A. Ouali, D. Demeyer and F. Smulders, Editors, *Expression of tissue proteinases and regulation of protein degradation as related to meat quality*, EECAMST, Utrecht, The Netherlands (1995), pp. 395–412.
2. Killefer, J., and H. Kocamis. 2003. Functional genomics: Development and gene regulation. In: Poultry Genetics, Breeding and Biotechnology. Muir, W.M., and Aggrey, S.E. , Editors, Ch.30: 607-628.

C. Monographs

1. Invited White Paper for Pfizer Pharmaceuticals. McKeith, F.K., Souza, C.M., Boler, D.D., Killefer, J., and Hennessy, D. (2009). Implications of using Improvac[®] for boar taint, growth, carcass quality and meat quality of finishing male pigs.
2. Invited White Paper for ELANCO Pharmaceuticals. Boler, D.D., S.F. Holmer, J. Killefer, and F.K. McKeith. 2007. The benefits of feeding Paylean to all aspects of the pork industry.

D. Refereed Journal Articles (Selected out of approximately 100 total)

- VanOverbeke, D.L., G.G. Hilton, J. Green, M. Hunt, C. Brooks, J. Killefer, M. Streeter, J. Hutcheson, W. Nichols, D. Allen, and D. A. Yates. 2009. Effect of zilpaterol hydrochloride supplementation of beef steers and calf fed Holstein steers on the color stability of top sirloin butt steaks. *J. Animal Science* 87(11):3669-3676.
- Boler, D.D., S.F. Holmer, F.K. McKeith, J. Killefer, D.L. VanOberbeke, G.G. Hilton, R.J. Delmore, J.L. Beckett, J.C. Brooks, R.K. Miller, D.B. Griffin, J.W. Savell, T.E. Lawrence, N.A. Elam, M.N. Streeter, W.T. Nichols, J.P. Hutcheson, D.A. Yates, and D. Allen. 2009. Effects of feeding Zilpaterol Hydrochloride (Zilmax[®]) for 20 to 40 days on carcass cutability and subprimal yield of calf-fed Holstein steers. *J. Animal Science*. 87:3722-3729.
- Holmer, S.F., D.M. Fernández-Dueñas, S.M. Scramlin, C.M. Souza, F.K. McKeith, and J. Killefer, R.J. Delmore, J.L. Beckett, T.E. Lawrence, D.L. VanOverbeke, G.G. Hilton, M.E. Dikeman, J.C. Brooks, M.N. Streeter, J.P. Hutcheson, W.T. Nichols, D.M. Allen, D.A. Yates. 2009. The effect of zilpaterol hydrochloride (Zilmax[®]) on meat quality in calf-fed Holsteins steers. *J. Animal Sciences* 87:3730-3738.
- Dilger, A.C., S.R. Gabriel, L.W. Kutzler, F.K. McKeith, and J. Killefer. 2010. The myostatin null mutation and clenbuterol administration elicit additive effects in mice. *Animal*, 4(3):466-471.
- Boler, D.D., A.C. Dilger, B.S. Bidner, S.N. Carr, J. M. Eggert, J.W. Day, M. Ellis, F.K. McKeith and J. Killefer. 2010. Ultimate pH explains variation in pork quality traits. *J. Muscle Foods* 21(1): 119-130.
- Dilger, A.C., P.J. Rincker, J.M. Eggert, F.K. McKeith, and J. Killefer. 2010. Pork tenderness and postmortem tenderization: Correlations with meat quality traits and the impact of sire line. *J. Muscle Foods* 21(3):529-544.
- Scramlin, S.M., W.J. Platter, R.A. Gomez, W.T. Choat, F.K. McKeith, and J. Killefer. 2010. Comparative effects of ractopamine hydrochloride and zilpaterol hydrochloride on growth performance, carcass traits, and sensory characteristics of finishing steers. *J. Animal Science* 88(5):1823-1829.

- Lawrence, T.E., M.F. Miller, J.C. Brooks, G.G. Hilton, D. L. VanOverbeke, F.K. McKeith, J. Killefer, T.H. Montgomery, D.M. Allen, D.B. Griffin, R.J. Delmore, W.T. Nichols, M.N. Street, D.A. Yates, and J.P. Hutcheson. 2010. Predicting red meat yields in carcasses from beef-type and calf-fed Holstein steers using the USDA calculated yield grade. *J. Animal Sciences* 88(6):2139-43.
- Lowe, B.K., Clark, D.L., Boler, D.D., Eggert, J.M., Newcom, D.W., Dilger, A.C., McKeith, F.K., and Killefer, J. (2011). Characterization of loin shape in Duroc and Duroc composite finishing gilts. *Meat Science*. 87(2):146-150.
- Boler, D.D., Holmer, S.F., Duncan, D.A., Carr, S.N., Ritter, M.J., Stites, C.R., Petry, D.B. Hinson, R.B., Allee, G.L., McKeith, F.K., and Killefer, J. (2011). Fresh meat and further processing characteristics of ham muscles from finishing pigs fed Ractopamine hydrochloride (Paylean®). *Journal of Animal Science*. 89(1):210-220.
- Souza, C.M, Boler, D.D., Clark, D.L., Holmer, S.F., Kutzler, L.W., Summerfield, J.W., Cannon, J.E., McKeith, F.K., and Killefer, J. (2011). The effects of high pressure processing on pork quality, shelf life, palatability, and further processed products. *Meat Science*. 87(4):419-427.
- Boler, D.D., Kutzler, L.W., Meeuwse, D.M., King, V.L., McKeith, F.K., and Killefer, J. (2011). Effects of increasing lysine levels on carcass composition and cutting yields of immunologically castrated males pigs. *Journal of Animal Science* 89 (7):2189-2199.
- Boler, D.D., Clark, D.L., Baer, A.A., Meeuwse, D.M., King, V.L., McKeith, F.K., and Killefer, J. (2011). Effects of increasing lysine levels on further processed product characteristics of immunologically castrated male pigs. *Journal of Animal Science* 89(7):2200-2209.
- Kutzler, L.W., Holmer, S.F., Boler, D.D., Carr, S.N., Ritter, M.J., McKeith, F.K., and Killefer, J. (2011). Comparison of varying doses and durations of Ractopamine on late finishing pig carcass characteristics and meat quality. *Journal of Animal Science* 89(7):2176-2188.
- Holmer, S.F., McFarlane, B.J., McKeith, F.K., and Killefer, J. 2011. The effect of processing techniques and brine formulations on the development of surface sheen in enhanced beef strip loin steaks. *Meat Science* 88(1):151-157.
- Clark, D. L., D. D. Boler, L. W. Kutzler, K. A. Jones, F. K. McKeith, J. Killefer, T. R. Carr, and A. C. Dilger (2011). Muscle gene expression associated with marbling in beef cattle. *Animal Biotechnology*. 22(2):51-63.
- Tavarez, M.A., D.D. Boler, K.N. Bess, J. Zhao, R.J. Harrell, A.C. Dilger, F.K. McKeith, and J. Killefer. (2011). Effects of antioxidant inclusion and oil quality on broiler performance, meat quality and lipid oxidation. *Journal of Poultry Science* 90(4):922-930.
- Boler, D.D., Fernandez-Dueñas, D.M., Kutzler, L.W., Zhao, J., Harrell, R.J., Campion, D.R., McKeith, F.K., Killefer, J. and A.C. Dilger (2012). Effects of oxidized corn oil and a synthetic antioxidant blend on performance, oxidative status of tissues, and fresh meat quality in finishing barrows. *Journal of Animal Science* 90(13): 5159-5169.
- Souza, C.M, Boler, D.D., Clark, D.L. Kutzler, L.W., Holmer, S.F. Summerfield, J.W., Cannon, J.E., McKeith, F.K., and Killefer, J. (2012). Varying the temperature of the liquid used for high-pressure processing of prerigor pork: Effects on fresh pork quality, myofibrillar protein solubility, and frankfurter textural properties. *Journal of Food Science*. 77(1):S54-S61.
- Tavarez, M.A., D.D. Boler, S.N. Carr, M.J. Ritter, D.B. Petry, C.M. Souza, J. Killefer, F.K. McKeith, and A.C. Dilger. (2012). Fresh meat quality and further processing characteristics of shoulders from finishing pigs fed ractopamine hydrochloride (Paylean). *Journal of Animal Science* 90 (13):5122-5134.
- Boler, D.D., A.L. Shrek, D.B. Faulkner, J. Killefer, F.K. McKeith, J.W. Homm, and J.A. Scanga. (2012). Effect of ractopamine hydrochloride (Optaflexx) dose on live animal

- performance, carcass characteristics and tenderness in early weaned beef steers. *Meat Science* 92 (4): 458-463.
- Boler, D.D., Killefer, J., Meeuwse, D.M., King, V.L., McKeith, F.K., and Dilger, A.C. (2012). Effects of slaughter time post-second injection on carcass cutting yields and bacon characteristics of immunologically castrated male pigs. *Journal of Animal Science*. 90(1):334-344.
- Cheng, D.M., Kutzler, L.W. Boler, D.D., Drnevich, J., Killefer, J., and Lila, M.A. (2013). Continuous infusion of 20-hydroxyecdysone increased mass of triceps brachii in C57BL/6 Mice. *Phytotherapy Research* 27:107-111.
- Bess, K.N., Boler, D.D., Tavarez, M.A., Johnson, H.K., McKeith, F.K., Killefer, J. and Dilger, A.C. (2013). Texture, lipid oxidation and sensory characteristics of ground pork patties prepared with commercially available salts. *LWT-Food Science and Technology*. 50(2):408-413.
- Lee, J.W., D.Y. Kil, B.D. Keever, J. Killefer, F.K. McKeith, R.C. Sulabo, and H.H. Stein (2013). Carcass fat quality of pigs is not improved by adding corn germ, beef tallow, palm kernel oil, or glycerol to finishing diets containing distillers dried grains with solubles. *Journal of Animal Science* 91(5):2426-2437.
- Puls, C. L.; Rojo, A.; Ellis, M.; Boler, D. D.; McKeith, F. K.; Killefer, J.; Gaines, A. M.; Matzat, P. D.; Schroeder, A. L. 2014. Growth performance of immunologically castrated (with Improvest) barrows (with or without ractopamine) compared to gilt, physically castrated barrow, and intact male pigs. *Journal of Animal Science* 92(5): 2289-2295.
- Lowder A.C., N.B. Parker, M. Kennedy, D. Keys, C.M. DeWitt and J. Killefer. 2016. Cull Hazelnuts as a lipid source in hog finishing rations: Effects on pork shelf-life and fatty acid composition. *Meat Science* 112:146
- Lowder A.C. and J. Killefer. 2016. Retail shelf-life of fresh and cured meat products stored under fluorescent and light emitting diode (LED) illumination sources. *Meat Science* 112:128-129

E. Creative Works

1. Filming for Feedstuffs FoodLink Series “Prions and Food Safety” and “Growth Promotant Safety”. Aired on the January 4, 2007 segment.
2. Provided Expert Opinion for the Los Angeles Times. Medicine: IN THE LAB: Petri dish certified: Growing meat in a lab sounds far-fetched, but some scientists see it as an inevitable evolution. Whether it’s practical remains to be seen. May 22, 2006.
3. Filming and review for “The Butcher” on the HISTORY CHANNEL. February – March, 2005.

F. Other

Patents:

1. Accelerated Chill and Enhancement for the Improvement of Meat Quality. 2003, 2004. (Awarded Provisional Patent Status, UIUC OTM, #60/647,294).

Resident Instruction**A. Summary of Instruction**

Dr. Killefer joined the faculty at Oregon State University in August, 2011 in an administrative appointment as Head of the Department of Animal and Rangeland Sciences. However, he had extensive engagement in the teaching program at the University of Illinois (2002-2011) and West Virginia University (1993 – 2002).

1. Descriptive Data

1. “Agricultural Biochemistry” (AGBI 210), 3 credit hours (West Virginia University). An introductory biochemistry course required for all Animal Science majors, advanced science course for Biology, Chemistry and Engineering majors. Principal instructor (100%).
2. “Agricultural Biochemistry Laboratory” (AGBI 211), 1 credit hours (West Virginia University). Required for all Animal Science majors. Principal instructor (100%).
3. “Agricultural Biochemistry Laboratory” (AGBI 211/Honors), 1 credit hours (West Virginia University). Honors section for all majors. Principal instructor (100%).
4. “General Biochemistry” (AGBI 312); 4 credit hours (West Virginia University). Developed and taught (100%) the second semester of a two semester graduate level series in General Biochemistry required by all Animal Science and Genetics graduate students.
5. “Orientation for Biochemistry Majors” (AGBI 199); 1 hours (West Virginia University). Required course for incoming freshman and transfer students enrolled in the new Biochemistry major co-developed by Dr. Killefer for West Virginia University.
6. “Meat Science” (ANSCI 309/409; 2004-2011); 4 hours (University of Illinois). Elective lecture and laboratory course for Animal Science and allied majors. Fundamental biological principles that influence growth, composition, processing, preservation, and quality of meat and meat products.
7. “Comparative Protein and Energy Nutrition” (ANSCI 420; taught in 2003 and 2004); 3 hours (University of Illinois). Physiological aspects of proteins and amino acids, fats and fatty acids, and carbohydrates as applied to higher animals; includes classification, digestion, absorption, utilization, metabolism, and dietary deficiencies and excesses.
8. “Meat Science Seminar” (ANSCI 590D; 2003-2011); 1 hours (University of Illinois). Discussions of current research and literature. Taught Spring and Fall semesters of each year.
9. “Muscle Biology” (ANSCI 409/509; 2003-2011); 2 hours (University of Illinois). Microstructure and chemical composition of muscle tissue; chemistry and biosynthesis of muscle and connective tissue proteins; and biochemical aspects of muscle contraction and rigor mortis.
10. “Principles of Animal Foods Technology” (ANS 251; 2012); 3 hours (Oregon State University). Processing of meat, milk and eggs into human food products. Lec/Lab
11. "Current Issues in Animal Science" (AS 389; 2022- present); 3 hours (SDSU). Capstone course required by Animal Science majors.
12. "Anatomy & Physiology of Domestic Animals" (VET 223/L; 2023); 4 hours (SDSU). Introduction to anatomy and physiology for pre-health and science majors.

2. Supervision of Graduate Student Research

M.S. Students (Supervised by Dr. Killefer)

1. Prigge, J.T. (MS: 8/94 - 12/96), Thesis Title: Role of calpain system in regulation of muscle growth and meat tenderness in broilers. Currently Study Director, US Army Medical Research Institute of Infectious Diseases.
2. Kocamis, H. (MS: 1/96 - 8/97), Thesis Title: In ovo administration of recombinant human IGF-1 or growth hormone alters postnatal growth and development of the broiler chick. Currently Vice Rector, Kirikkale University, Turkey.
3. Yao, Y. (MS: 8/95 - 8/97), Thesis Title: Identification of protein kinase C isoforms in rat skeletal muscle and regulation by calpain. Currently completing a PhD. in Biostatistics, WVU.
4. Janardhanan, A. (MS: 9/97 –8/99), Thesis Title: Gene expression of the calpain system: m-Calpain, u-Calpain and calpastatin in male and female broiler skeletal muscle. Currently a QC specialist for the American Red Cross, Raleigh, NC.
5. Holstine, J. (MSA: 6/99 –7/01), Thesis Subject: Genetic factors affecting growth and development of the rainbow trout. Currently completing an EdD., WVU.
6. Sarver, A. (MS: 6/99 –7/01), Thesis Title: The ontogeny of myogenic regulatory factor expression during muscle differentiation of the biceps femoris and pectoralis major muscles of the chicken. Currently molecular biologist for SAIC, Rockville, MD.
7. Holmer, S.F. (MS: 2003 - 2005) Thesis Title: The effects of feeding regimen and enhancement on muscle characteristics of beef cull cows. Currently Senior Director Smithfield Foods.
8. Kutzler, L. (MS: 2003 - 2006) Thesis Title: Effects of feeding regimens on animal growth, longissimus muscle DNA and protein concentration, gene expression and protein degradation in beef cull cows. Currently Senior Product Development Scientist, Global Wet Nestle Purina Company North America.
9. Litman, G. (MS: 2004 - 2006) Thesis Title: The contribution of lean and fat to beef and pork flavor. Currently owner of Georgia's Pies
10. Myers, A. (MS: 2004 - 2007) Thesis Title: The effects of cooking temperature on beef and pork flavor. Currently employed by Ed Miniat Inc.
11. Kelly, A. (MS: 2005-2007), Thesis Title: Genetics of chronic wasting disease in Illinois white tail deer. Currently Genomics Data Analyst and Bioinformatics Scientist at USDA.
12. Gabriel, S. (MS: 2007-2009) Thesis Title: PPAR-delta agonists alter muscle fiber type and hypertrophy in myostatin null mice. Currently Manager of Food Safety and Regulatory at Nikken Foods USA.
13. Boler, D. (MS: 2007- 2008) Thesis Title: Effect of different dietary levels of natural-source vitamin E in grow-finish pigs on pork quality and shelf life. Currently Director of Research Topigs Norsvin.
14. Souza, C. (MS: 2007-2009) Thesis Title: The effect of high pressure processing on pork quality, shelf life, palatability, and further processed products. Currently Product Development Busseto Foods.
15. Tavarez, M. (MS: 2009-2011) Fulbright Fellow; Thesis Title: Effect of ractopamine in pork shoulder yield and quality including further processed product quality. Currently Head of Department of Food Technology at Universidad ISA, Dominican Republic.
16. Bess, K. (MS: 2009-2012) Thesis Title: Effects of various salt purity levels on lipid oxidation and sensory characteristics of ground turkey and pork. Currently Associate Food Scientist, Research and Development at Smithfield Foods.
17. Keever, B. (MS: 2010-2012) Thesis Title: Salt concentration and species affects protein extractability and processed meats characteristics. Currently Sr. Associate Business Analyst at Elanco Knowledge Solutions.

18. Jones, J. (MS: 2010-2012) Thesis Title: Expression reduction of proliferative genes in skeletal muscle and organs with age. Currently Research Specialist University of Illinois.
19. Parker, N (MS: 2012-2016) Thesis Title: Effects of nutrition on meat quality characteristics. Currently Instructor and Meat Lab Manager at Oregon State University.

M.S. Students (as member of committee by Dr. Killefer)

1. 11 students while at West Virginia University (1994-2002).
2. Zhang, X. (MS: 2000 – 02), Thesis Title: Influence of Age on Caspases and BCL-2 Protein in Chicken Skeletal Muscle.
3. Gooding, J. (MS 2001 – 03), Thesis Title: Characterization of striping in fresh, enhanced pork loins.
4. Livingston, M. (MS 2001 – 03), Thesis Title: Factors affecting the shelf life of modified atmosphere packaged pork.
5. Kazlauskas, A. (MS 2002-05), Thesis Title: Characterization of the porcine oligonucleotide microarray, effects of ractopamine hydrochloride on gene expression in skeletal muscle.
6. Rincker, P. (MS 2002-05), Thesis Title: An objective method to measure firmness in fresh pork loins.
7. Varnold, K. (MS 2006-2009), Thesis Title: The Effects of Feeding Pigs Diets Containing Distillers Dried Grains with Solubles and Conjugated Linoleic Acid on Pork Fat Quality
8. Leick, C. (MS: 2006- 2008), Thesis Title: Impact of distillers dried grain with solubles and ractopamine on quality and shelf life of fresh pork and bacon.
9. Graugnard, D. (MS: 2006-2008), Title: Muscle gene expression in growing steers.
10. Ochoa, L. (MS: 2007-2009), Title: Evaluation of the accuracy of simple body measurements for live weight prediction in growing-finishing pigs.
11. Puls, C. (MS: 2006 – 2009), Title: effects of birth weight and paylean inclusion level on the growth performance, carcass characteristics, and fresh pork quality parameters of pigs.
12. Mercedes, M. (2006 – 2009), Title: Effects of single compared to multiple dietary phases on the growth performance and carcass characteristics of growing-finishing pigs.
13. Gibson, Y. (2013-2015), Title: Crafting a Learning Experience (Rangeland Sciences).

Ph.D. Students (Supervised by Dr. Killefer)

1. Kocamis, H. (Ph.D.: 9/97 –6/01), Dissertation Title: Functional profiles of growth related genes during embryogenesis and postnatal development of chicken and mouse skeletal muscle. Currently Vice Rector, Kirikkale University, Turkey.
2. Gahr, S.A. (Ph.D.: 8/99 – 7/02), Dissertation Title: Role of TGF-B family members on muscle development. Currently a USDA Research Scientist-physiology at the USDA National Center for Cool and Cold Water Aquaculture, Biology Faculty St. Vincent College.
3. Richter, J. (Ph.D.: 1/98 –8/02), Dissertation Title: Genetic factors affecting growth and development. Currently an Professor at Lander University, SC.
4. Salem, M. (Ph.D.: 6/00 –5/05), Dissertation Title: Cloning of calpains from the rainbow trout. Currently Assistant Professor of Genomics at Middle Tennessee State University.
5. Dilger, A.C. (Ph.D.: 2004 - 2009), Thesis Title: Factors affecting the growth of muscle and adipose tissue in normal and myostatin null mice. Currently Associate Professor at University of Illinois.
6. Holmer, S.F.(Ph.D.: 2006- 2009), Thesis Title: Factors affecting the textural properties of pork. Currently Senior Director Smithfield Foods.

7. Scramlin, S. (Ph.D.: 2006- 2009), Thesis Title: Bacon Production: Evaluating Potential Processing and Management Practices to Improve Product Quality of Industrial Sliced Bacon. Assistant Professor at Purdue University.
8. Fernandez, D. (Ph.D.: 2006- 2009), Thesis Title: Oxidized energy sources fed to finishing pigs: Meat quality and shelf life evaluation. CLO JBS-Swift, Cactus TX.
9. Kutzler, L. (Ph.D.: 2006- 2010), Thesis Title: Effects of ractopamine and muscle fiber number on swine growth performance, carcass traits, and meat quality. Senior Product Development Scientist, Global Wet Nestle Purina Company North America
10. Boler, D. (Ph.D.: 2008-2011), Thesis Title: Effects of gonadotrophin releasing factor immunological (Improvast) on carcass characteristics, pork quality, and further processing characteristics of finishing male pigs. Currently Director of Research Topigs Norsvin.
11. Chen, C. (Ph.D.: 2011-2013), Thesis Title: Quantitative and Molecular Genetics of Larval Susceptibility to *Vibrio tubiashii* in Pacific Oysters (*Crassostrea gigas*). Currently Postdoctoral Scholar at Institute of Apiculture, Chinese Academy of Agricultural Sciences.

Ph.D. Students (as committee member by Dr. Killefer)

1. 10 students while at West Virginia University (1994 – 2002).
2. Bertol, Teresinha (Ph.D.: 2000-03), Thesis Title: Management and nutritional approaches to reducing glycolytic potential and stress responses in pigs.
3. Carr, S.N. (Ph.D.: 2000 -03), Dissertation Title: The Effects of Ractopamine (Paylean) on Efficiency, Carcass Composition, Carcass Quality and Fat Quality on High Lean Growth Pigs.
4. Escobar, J. (Ph.D.: 2000 -03), Dissertation Title: Effects of Porcine Reproductive and Respiratory Syndrome Virus Infection of Young Pigs on Whole-body Protein Accretion and Skeletal Muscle Myostatin.
5. Castaneda, E. (Ph.D.: 2002-05), Thesis Title: Nutritional approaches to increase intramuscular fat in pigs.
6. Zhang, X. (Ph.D.: 2002 – 05), Thesis Title: Roles of zinc in skeletal muscle growth
7. Ritter, M. (Ph.D.: 2002-2006), Thesis Title: Influence of animal handling and transportation factors on the incidence of dead and non-ambulatory pigs.
8. Meyers, S. (Ph.D.: 2003-2007), Thesis Title: Fine-mapping of a QTL influencing pork tenderness.
9. Brana, D. (Ph.D.: 2004-2006)
10. Rincker, P. (Ph.D.: 2005-2007), Thesis Title: The impacts of intramuscular fat content and other biochemical attributes of fresh pork loins on sensory characteristics.
11. Peterson, B. (Ph.D.: 2004 – 2008), Thesis Title: Effects of birth and weaning weight on variation in growth performance parameters and carcass characteristics and composition.
12. Kelly, A. (Ph.D.: 2007-2010), Thesis Title: Landscape Genetics and Chronic Wasting Disease in White-tailed Deer.
13. Trump, L (Ph.D.: 2005-2011)
14. Wagner, E. (Ph.D.: 2006-2011)
15. Cheng, D. (Ph.D.: 2008-2010) Thesis Title: Phytoecdysteroid accumulation in plants and bioactivities in animal models
16. Lowder, A. (Ph.D.: 2011-2013), Thesis Title: Addressing Sodium Reduction and Pathogen Internalization in Non-Intact Whole Muscle Beef: Evaluation of Dehydrated Collagen and Hydrostatic Pressure as Impact Technologies

Postdoctoral trainees

1. Michele McGuiness, Ph.D. 1999-2002; Research Area: Genome mapping of the rainbow trout: Development of a genetic map. Currently with the CDC.

2. Lu Yan, Ph.D. 2000. Visiting Scientist. Was Associate Director of the Poultry Research Institute currently Vice-President Shandong Academy of Agricultural Sciences.
 3. SoonHag Kim, Ph.D. 2000-02; Research Area: Genome mapping of the rainbow trout: Development of ESTs. Currently a senior scientist for the Korean National Institutes of Health.
 4. Kocamis, H. 2002; Functional genomics in muscle development. Currently Vice Rector, Kirikkale University, Turkey.
 5. Dilger, A. 2010; Cellular mechanisms of animal growth. Currently Associate Professor of Animal Sciences at University of Illinois.
 6. Lowder, A. 2013 – 2015; Interaction of nutrition and value-added product development. Currently Applications Scientist, DuPont Nutrition & Health
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