

The Meat Science Program at Ohio State

Through the Meat Science Program, you will learn the underlying principles of biology, physiology, and nutrition that drive animal growth and the impact they have on meat quality. You will *connect scientific principles to the end-product through hands-on experiences*. Through courses, internships, research, and part-time student employment, you will gain practical experience and learn about:

- Life-cycle production and management across multiple species
- Live animal, carcass, and genetic assessment
- Cellular effects on animal growth and development
- Meat processing and branded meat products
- Critical factors influencing animal care and welfare
- Production of high-value, high-quality, fresh, and processed food
- Relationships between on-farm, packing, and retail segments of food animal production
- Food Safety/Food Microbiology



Graduate students collecting beef carcass research data.

TOP PRIORITIES OF THE MEAT SCIENCE PROGRAM:

- Science, Technology, Engineering, and Mathematics (STEM)
- Higher Education and Career Pathways
- Workforce Development
- Food for Human Health



Dr. Lyda G. Garcia - Extension (garcia.625@osu.edu)

Meat Laboratory Facility

The Meat Science Teaching Laboratory is a fully functioning and federally (USDA) inspected meat processing facility. It is the site where most of the meat science classes, meat science extension programs, internships, and research experiences take place. As a result, you will gain experience in:

- Techniques involved in harvesting and fabricating carcasses to retail cuts
- Making processed meat products like sausage, bratwurst, or jerky
- Product development
- Quality assurance
- Facility inspection
- Equipment processes and management





Dr. Ben Bohrer Muscle Biologist – Meat Science Research (bohrer.13@osu.edu) and his Ph.D. student, Nicole Wang.

Did You Know?

Starting salary for Meat Science students is anywhere between \$40,000 and \$55,000!

There are currently more jobs in the meats industry than there are people to fill them, many recent alumni find themselves in management positions within a relatively short period of time.



Dr. Lyda G. Garcia - Meat Judging (garcia.625@osu.edu)



Meat Processing Short Course – Dr. Lynn Knipe (knipe.1@osu.edu)

Careers

- Food Safety Inspection Service (FSIS)
- USDA Agricultural Marketing Service Grader (USDA-AMS)
- Product Development
- Quality Assurance
- Research
- Supervisor
- Import/Export Trade
- Extension / Outreach
- Etc...



Dr. Michael Cressman – BBQ Science (cressman.2@osu.edu)

Many of our students find high-paying opportunities prior to graduation with large companies such as: Cargill, Smithfield, Wendy's, Sugar Creek Packaging, Beef Products Inc., Tyson, and Boar's Head, to name a few.



Mr. Ethan Scheffler – Meat Laboratory Manager (scheffler.15@osu.edu)

Opportunities in Meat Science

- Internships – hands on experiences and training to develop interpersonal skills
- Undergraduate Research - Expand on your classroom studies through in-depth, hands-on experiences that will allow you to discover how research advances our understanding of animals. In addition, you will learn about the processes of experimental design, implementation, and analysis.
- Meat Judging Team Member - The meat judging program complements student education in agriculture through teaching how the final end product is evaluated, fabricated, and marketed. Meats team members are exposed first hand to numerous segments of the meats industry across the U.S.
- Meat Science Club Member / Officer - The Meat Science Club formed to promote the meat industry through educational and industrial experiences by means of interaction with professors, leaders of the industry, and future employers.

The College of Food, Agricultural, and Environmental Sciences and its academic and research departments including, Ohio Agricultural Research and Development Center (OARDC), Agricultural Technical Institute (ATI) and Ohio State University Extension embraces human diversity and is committed to ensuring that all research and related educational programs are available to clientele on a nondiscriminatory basis without regard to age, ancestry, color, disability, gender identity or expression, genetic information, HIV/AIDS status, military status, national origin, race, religion, sex, sexual orientation, or veteran status. This statement is in accordance with United States Civil Rights Laws and the USDA.

Cathann Kress, Vice President for Agricultural Administration and Dean

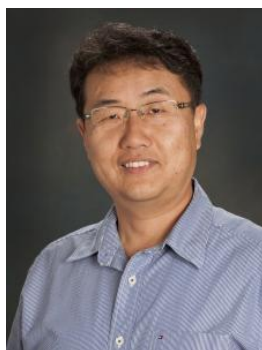
For Deaf and Hard of Hearing, please contact the College of Food, Agricultural, and Environmental Sciences using your preferred communication (e-mail, relay services, or video relay services). Phone 1-800-750-0750 between 8 a.m. and 5 p.m. EST Monday through Friday. Inform the operator to dial 614-292-6891.

MEAT SCIENCE FACULTY AND STAFF:

- **McDonald Wick:** Professor. Responsibilities: Research (80%) and Teaching (20%). *Area: Beef, Fish, Poultry and Muscle growth and development.* Email: wick.13@osu.edu
- **Kichoon Lee:** Professor. Responsibilities: 80% Research and 20% Teaching. *Area: Poultry, beef and swine, growth biology, muscle growth and development.* Email: lee.2626@osu.edu
- **Sandra G. Velleman:** Professor. Responsibilities: 80% Research and 20% Teaching. *Area: Poultry, Muscle development and growth.* Email: velleman.1@osu.edu
- **C. Lynn Knipe:** Associate Professor. Responsibilities: Extension (75%) and Research (25%). *Area: Meat Science - Extension Meat Specialist, Processing and HACCP.* Email: knipe.1@osu.edu
- **Lyda G. Garcia:** Associate professor. Responsibilities: Teaching (50%) and Extension & Outreach (50%). *Area: Meat Science. Meat judging coordinator. Extension Meat Specialist, Fresh Meats.* Email: garcia.625@osu.edu
- **Benjamin Bohrer:** Assistant Professor. Responsibilities: Research (70%) and Teaching (30%). *Area: Muscle biology and Meat Science.* Email: bohrer.13@osu.edu
- **Michael Cressman:** Assistant Professor, Clinical Practice. Responsibilities: Teaching (80%) and Extension (20%). *Area: Poultry.* Email: cressman.2@osu.edu
- **Ethan Scheffler:** Meat Laboratory Manager. Responsibilities: Manager of the Ohio State USDA Inspected Meat Laboratory. Email: scheffler.15@osu.edu



Dr. M. Wick



Dr. K. Lee



Dr. S. Velleman



Dr. K. Knipe



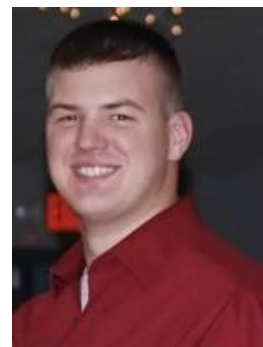
Dr. L. G. Garcia



Dr. B. Bohrer



Dr. M. Cressman



Mr. E. Scheffler

MEAT SCIENCE RELATED COURSES OFFERED

MEATSCI 2010: Barbecue Science

Investigating methods to prepare various meat products and matching proper cooking methods with different muscles to produce wholesome and palatable products. Students will be introduced to product sensory techniques.

Faculty: Dr. M. Cressman

MEATSCI 3110: Introduction to Meat Science

Analysis of the principles of meat science as related to meat animal value factors, processing technology, and merchandising systems affecting the producer, processor, and consumer.

Faculty: Dr. L. G. Garcia

MEATSCI 3210: Food Animal Processing

Hands-on application of the procedures involved with food animal harvest, inspection, carcass fabrication and merchandising retail products.

Faculty: Dr. L. G. Garcia, Dr. M. Cressman and Mr. E. Scheffler

MEATSCI 3310: Meat Animal Carcass Evaluation

Evaluating factors that influence the value of meat animals and their resulting carcasses, wholesale, and retail cuts in accordance with recognized grading standards, laboratory practice.

Faculty: Dr. L. G. Garcia

MEATSCI 4193: Individual Studies

Students can complete up to three credit hours by taking short courses, such as Beef/Pork/Lamb 509, HACCP training or Processed Meats.

Faculty: Dr. L. G. Garcia and Dr. L. Knipe

MEATSCI 4510: Processed Meats

Exploring fundamental changes in soft animal tissues resulting from comminution and application of non-meat ingredients and a variety of cooking methodologies to enhance palatability and value.

Faculty: Dr. B Bohrer and Dr. L. Knipe

MEAT SCIENCE RELATED COURSES OFFERED (cont'd)

MEATSCI 5810: Branded Meat Products

Integration of multiple factors influencing value-added product development including raw material quality and procurement, processing, packaging, distribution, and complexity of market development and current consumer trends in niche marketing.

Faculty: Dr. B. Bohrer

MEATSCI 5510: Advanced Meat Science

Exploration of the antemortem and postmortem biochemical principles in skeletal muscle underlying protein functionality and resulting meat quality.

Faculty: Dr. B. Bohrer and Dr. M. Wick

ANIMSCI 3100: Growth and Development

An overview of growth and development on form and function of food animals and its impact on value.

Faculty: Dr. B. Bohrer

ANIMSCI 3306: Poultry Selection and Evaluation

To learn about the principles of poultry science; the evaluation and ranking of standard breeds of chickens; and the evaluation and grading of poultry meat and egg products. In addition, practical and safe handling techniques of live poultry.

Faculty: Dr. M. Cressman

ANIMCSCI 5100: Advanced Growth and Development

A molecular developmental approach to the study of tissue growth, structure, and function in animals and humans.

Faculty: Dr. K. Lee and Dr. S. Velleman

The College of Food, Agricultural, and Environmental Sciences and its academic and research departments including, Ohio Agricultural Research and Development Center (OARDC), Agricultural Technical Institute (ATI) and Ohio State University Extension embraces human diversity and is committed to ensuring that all research and related educational programs are available to clientele on a nondiscriminatory basis without regard to age, ancestry, color, disability, gender identity or expression, genetic information, HIV/AIDS status, military status, national origin, race, religion, sex, sexual orientation, or veteran status. This statement is in accordance with United States Civil Rights Laws and the USDA.

Cathann Kress, Vice President for Agricultural Administration and Dean

For Deaf and Hard of Hearing, please contact the College of Food, Agricultural, and Environmental Sciences using your preferred communication (e-mail, relay services, or video relay services). Phone 1-800-750-0750 between 8 a.m. and 5 p.m. EST Monday through Friday. Inform the operator to dial 614-292-6891.