Interested in research or want to find out what it is all about?

Research positions are available for undergraduate students who are interested in research in the Department of Animal Sciences. Applicants must commit to full-time research over a 10 week period during summer 2017 and submit an abstract for participation in the CFAES and University Denman undergraduate research forums spring semester 2017. Each position is awarded $3500. The award is distributed in two parts: $3000 is disbursed at the beginning of the summer of research and the remaining $500 is disbursed upon submission of an abstract to the CFAES undergraduate research forum and University Denman undergraduate research forum. Research positions are located in Columbus and at the Ohio Agricultural Research and Development Center in Wooster, Ohio. Detailed position descriptions follow.

The application deadline for Animal Sciences Undergraduate Research Experiences is Wednesday, February 15, 2017.

Eligibility:
Minimum requirements for application to these positions include:

- OSU undergraduate student of the Columbus campus
- Minimum cumulative GPA of 2.50 (research experiences are for non-honors students)
- Anticipated graduation date of spring 2018 or later

Selection of applicants will be made in consultation with Animal Sciences faculty. Applications must include all required components for consideration. **Failure to adhere to program submission requirements disqualifies the application.**

Students may be eligible to use the experience for internship credit (ANIM SCI 3191), individuals studies credit (ANIMSCI 4193), or graduation with research distinction (ANIM SCI 4999). To be eligible for 3191 credit, students must be Animal Sciences majors and are required to adhere to the departmental internship program requirements (http://ansci.osu.edu). For eligibility for 4999 credit, students accepted for a position must develop an independent research project proposal in consultation with their research mentor and must submit a plan for research distinction to the Department of Animal Sciences and to CFAES. The plan for research distinction must be pre-approved. In addition, a final oral component and research thesis is required (http://ansci.osu.edu/undergraduate/ug-research).

Research experiences cannot be used to fulfill more than one course. In addition, these experiences are for non-honors students and are not eligible for honors research distinction (4999H). Students in CFAES interested in funding honors research should apply to the CFAES Honors Scholarship Competition offered each spring term.
Application Components:
To apply you will need:

1) Application form (http://ansci.osu.edu/undergraduate/ug-research)
2) Personal statement, submitted as part of the application form, discussing your academic intentions, career goals, interest in research, and why the positions chosen interests you.
3) Resume
4) Your most recent advising report including autumn term grade postings (available at http://buckeyelink.osu.edu)

- Incomplete applications that fail to provide the information requested in the application form and/or that fail to provide all required components above will not be considered.
- Applicants are not required to have prior experience in research or animal handling.

Submission Instructions:
E-mail a copy of these items (as attachments) no later than 5:00 pm February 15, 2017 to:

Pasha A Lyvers Peffer
Department of Animal Sciences
lyvers-peffer.1@osu.edu

Include in the subject: ANIM SCI UGR Experience Application 2017

Once your application materials are received you will receive a confirmation email.

Questions:
Direct all questions regarding the program, eligibility, or application process to:

Pasha A Lyvers Peffer
Department of Animal Sciences
lyvers-peffer.1@osu.edu
POSITION DESCRIPTIONS & LOCATION

POULTRY GUT HEALTH-Wooster, OH

SUPERVISOR INFORMATION:
Dr. Lisa Bielke, Assistant Professor
Department of Animal Sciences
202 Gerlaugh Hall
1680 Madison Ave
Wooster, OH 44691

Phone: 330-263-3945 Fax: 330-263-3949
Email: bielke.1@osu.edu

DETAILED SUMMARY OF DUTIES & RESPONSIBILITIES:
- General animal (poultry) care during research experiments, sample collection and analysis, data input, general lab cleaning and media preparation.
- Some duties may require weekend and/or non-traditional work hours.
- Prepare and present a poster at the CFAES Undergraduate Research Forum and Denman Undergraduate Research Forum that are held in the Spring Term.

KNOWLEDGE & EXPERIENCE STUDENT WILL GAIN:
This research experience will provide students an opportunity to implement scientific processes from hypothesis to conclusion, and learn basic laboratory techniques related to microbiology. Emphasis of research will be poultry gut health, especially in reference to impact of gut microbiome on development and homeostasis.
SKELETAL MUSCLE GROWTH AND DEVELOPMENT – Wooster, OH

SUPERVISOR INFORMATION:
Dr. Daniel Clark, Assistant Research Professor
Department of Animal Sciences
103 Gerlaugh Hall
1680 Madison Ave
Wooster, OH 44691

Phone: 618-553-5506  Fax: 330-263-3949
Email: clark.2710@osu.edu

DETAILED SUMMARY OF DUTIES & RESPONSIBILITIES:
• Assist with livestock handling and sampling procedures
• Recognize and understand basic laboratory research procedures
• Perform applied assays to understand treatment effects on the basic principles of muscle growth and meat quality
• Learn molecular research techniques to understand the underlying cellular signal transduction pathways impact on muscle growth and meat quality
• Learn proper cell culture techniques and appropriate in vitro assays
• Input, organize and maintain accurate data
• Assist with appropriate statistical analyses and learn how to interpret research results
• Present research findings at the CFAES Undergraduate Research Forum and Denman Undergraduate Research Forum that are held in the Spring Term.

KNOWLEDGE & EXPERIENCE STUDENT WILL GAIN:
The objectives of this experience will be tailored to meet the student interests while simultaneously propelling the overall lab research progress forward. Students will be required to design a research proposal with an objective to determine how cellular processes govern muscle growth and meat quality. Dependent upon the student’s interests, a number of molecular techniques including quantitative PCR, SDS-PAGE, histology, immunolabeling and applied meat yield and quality techniques can be used to test an appropriate student developed hypothesis.
SKELETAL MUSCLE BIOLOGY AND MEAT SCIENCE – Columbus, OH

SUPERVISOR INFORMATION:
Dr. Eric England, Assistant Professor
Department of Animal Sciences
122D Animal Science Building
2029 Fyffe Court
Columbus, OH 43210-1095

Phone: 614-247-7863   Fax: 614-292-2929
Email: england.146@osu.edu

DETAILED SUMMARY OF DUTIES & RESPONSIBILITIES:
• Assist with animal harvest and postmortem tissue collection
• Gain proficiency in basic and advanced laboratory techniques
• Collect and analyze data from multiple research projects
• Attend laboratory group meetings and provide a research status update
• Help with laboratory maintenance and upkeep
• Participate in a poster presentation at the CFAES Undergraduate Research Forum and Denman Undergraduate Research Forum during Spring 2017

KNOWLEDGE & EXPERIENCE STUDENT WILL GAIN:
The student will gain knowledge and experience working with skeletal muscle and meat from a variety of livestock species. The student will become proficient in a number of the following techniques based on the laboratory needs and student’s interests: muscle sample collection and processing, muscle metabolite analysis, histology, PCR, SDS-PAGE, immunoblotting, HPLC, and meat quality analysis.
RUMINANT NUTRITION (DAIRY) - Columbus, Ohio

SUPERVISOR INFORMATION:
Dr. Maurice L. Eastridge, Professor
Department of Animal Sciences
221B Animal Science Building
2029 Fyffe Court
Columbus, OH 43210-1095

Phone: (614) 688-3059 Fax: (614) 292-1515
Email: eastridge.1@osu.edu
Website Address: http://ansci.osu.edu/eastridge

DETAILED SUMMARY OF DUTIES & RESPONSIBILITIES:
Level of engagement is dependent on the student’s interests and experiences.

- Conduct chemical analyses in the ruminant nutrition laboratory
- Assist in collection of data during research trials
- Assist with feeding animals on research trials
- Input and organize research data in a spreadsheet
- Assist with the education of youth about feeding dairy cattle and programs held during the Ohio State Fair
- Prepare a poster for the CFAES Undergraduate Research Forum and Denman Undergraduate Research Forum that are held during Spring Semester. Also, the opportunity will be available to present the student’s research at the Tri-State Dairy Nutrition Conference and the American Dairy Science Association.

KNOWLEDGE & EXPERIENCE STUDENT WILL GAIN:
An understanding of the importance of the accuracy of laboratory analyses will be gained as students explore the major areas of research in ruminant nutrition. The research process, from a hypothesis to conducting a research trial to data interpretation, will be explored through the research methods used in ruminant nutrition.
**RUMINANT NUTRITION RESEARCH: Columbus, OH**

**SUPERVISOR INFORMATION:**

Dr. Jeff Firkins  
Department of Animal Sciences  
223 Animal Science Building  
2029 Fyffe Court  
Columbus, OH 43210-1095

Phone: 614 688 3089    Fax: 614 292 1515  
Email: firkins.1@osu.edu

**DETAILED SUMMARY OF DUTIES & RESPONSIBILITIES:**

- General labwork in ruminant nutrition and microbiology  
- Independent study on ruminal fermentation, protozoal culture, and microbial growth  
- Data analysis and presentation

**KNOWLEDGE & EXPERIENCE STUDENT WILL GAIN:**

Critical thinking and interpretation skills will be gained as the student integrates ruminal microbiology and nutrition. The student will appreciate the scientific method, experimental design, and statistical analyses. Communication skills will be developed—both oral and written, through the research process, team-building, and collaboration with graduate students.
SWINE NUTRITIONAL IMMUNOLOGY & DEVELOPMENTAL NUTRITION - Columbus & Wooster, OH*

SUPERVISOR INFORMATION:
Dr. Sheila Jacobi, Assistant Professor
Department of Animal Sciences
207 Gerlaugh Hall
1680 Madison Avenue
Wooster, OH  44691

Phone:  330-263-3959   Fax:  330-263-3949
Email:  jacobi.1@osu.edu

DETAILED SUMMARY OF DUTIES & RESPONSIBILITIES:
- Execution of experiment, data collection, analysis and presentation of the results involving swine nutrition and intestinal health
- Experience in animal care, dietary treatments, laboratory techniques, statistical analysis, and interpretation of results
- Integration of findings with current literature in the area will be required for presentation of results at the CFAES Undergraduate Research Forum and Denman Undergraduate Research Forum that are held during the spring term.

KNOWLEDGE & EXPERIENCE STUDENT WILL GAIN:
The student’s research will aim to identify nutritional programming of the baby pig intestinal health and immune function. Basic techniques in molecular biology and immunology will be learned to evaluate the role bioactive nutrients role in programming intestinal health.

*Students will conduct research in both the Columbus and Wooster, OH locations.
RUMINANT NUTRITION & NUTRIENT MANAGEMENT – Wooster, Ohio

SUPERVISOR INFORMATION:
Dr. Chanhee Lee, Assistant Professor
Department of Animal Sciences
313 Gerlaugh Hall
1680 Madison Avenue
Wooster, OH 44691

Phone: 330/2633794 Fax: 330/2633949
Email: lee.7502@osu.edu

DETAILED SUMMARY OF DUTIES & RESPONSIBILITIES:
• Students will be involved in nutrient management projects (ruminant nutrition, nutrient excretion, manure management).
• Sampling from ruminants (beef or dairy), sample analysis, and data management.
• Independent research project assigned based on student interests.
• Present of results in the CFAES and Denman Undergraduate research forums. Potential for presentation in a national conference, dependent on student research output.

KNOWLEDGE & EXPERIENCE INTERN SHOULD GAIN:
Improving ruminant productivity and mitigating environmental impacts will be a focus. By assisting a research technician and graduate student in running animal studies, students will understand a scientific research process. Various techniques (analyses and sampling) and basic knowledge on ruminant nutrient management (feed to manure; environmental impacts) will be obtained. By working as part of a group and participating in national conferences, students will improve their communication skills.
MOL ECULAR AND CELLULAR BIOLOGY – Columbus, OH

SUPERVISOR INFORMATION:
Kichoon Lee, Associate Professor
Department of Animal Sciences
222F Animal Science Building
2029 Fyffe Court
Columbus, OH 43210-1095

Email: lee.2626@osu.edu

DETAILED SUMMARY OF DUTIES & RESPONSIBILITIES:
• Assist with the collection of data during poultry and swine research trials in the area of Nutrition and Molecular Biology.
• Assist with data analysis and interpretation of results.
• Prepare a poster for the CFAES Undergraduate Research Forum and Denman Undergraduate Research Forum that are held during the Spring term.

KNOWLEDGE & EXPERIENCE STUDENT WILL GAIN:
Student will gain an understanding of basic laboratory techniques, the research process, and the value of communicating research. A basic understanding of molecular genetics with regard to the developmental biology of adipose and muscle tissues will be a focus.
SWINE BEHAVIOR RESEARCH—Columbus, OH

SUPERVISOR INFORMATION:
Dr. Monique Pairis-Garcia, Assistant Professor
Department of Animal Sciences
222E Animal Sciences Building
2029 Fyffe Rd.
Columbus, OH 43210
Phone: 614-688-1968  Fax: 614-292-1515
Email: pairis-garcia.1@osu.edu

DETAILED SUMMARY OF DUTIES & RESPONSIBILITIES:
The objective of this study is to evaluate feeding patterns and behaviors of a sow herd transitioning from individually housed stalls to group housing utilizing the Gestal® as the sole feeding system. This project will quantify feeding patterns and frequencies of group housed sows and determine how experience and time using the Gestal® feeder alters sow feeding behavior.

Responsibilities include:
• Complete pre-training requirements (by May 31st, 2016) and be competent in working with video equipment
• Be attentive and consistent when scoring video, but be able to work independently on the project without supervision of professor
• Be engaged in the project and ask questions as needed
• Have regular meetings with Dr. Pairis-Garcia to give a progress and update report and to discuss any concerns or challenges experienced

KNOWLEDGE & EXPERIENCE STUDENT WILL GAIN:
The student will become proficient in behavioral sampling techniques and the concepts of behavioral methodology that can be applied to future research projects. A unique skill set in collecting behavioral data utilizing a professional software program for collection, analysis and presentation of behavioral data will be developed. The student will understand the importance and application of work to current industry needs and gain experience supporting data results with peer reviewed literature and participation in scientific conferences and poster presentations.
RUMINANT NUTRITION AND METABOLISM—Wooster, OH

SUPERVISOR INFORMATION:
Dr. Alejandro Relling, Assistant Professor
114 Gerlaugh Hall
1680 Madison Avenue
Wooster, OH 44691

Phone: 3302633900       Fax: 3302633949
Email: relling.1@osu.edu

DETAILED SUMMARY OF DUTIES & RESPONSIBILITIES:
The student will work on beef and sheep nutrition projects.
- Assist in collecting and analyzing feed samples, estimate dry matter intake.
- Assist in measuring growth and estimating feed efficiency in ruminants
- Assist in conducting chemical analyses in the ruminant nutrition laboratory
- Assist with the feeding and general care of animals on research trials
- Input and organize research data
- Assist with data analysis
- Depending on the student’s interests and experience, they may engage in an independent research project
- Prepare a poster for the CFAES Undergraduate Research Forum and Denman Undergraduate Research Forum that are held during Spring term

KNOWLEDGE & EXPERIENCE STUDENT WILL GAIN:
An understanding of the importance of animal management practice and the accuracy of laboratory analyses will be gained as students explore the major areas of research in ruminant nutrition. The research process, from a hypothesis to conducting a research trial, analyzing the samples and the data and data interpretation, will be explored through the research methods used in ruminant nutrition.