

## Student Events

### • Olds College Practicum – August 2017

Students will have the opportunity to see small scale slaughter and learn about meat processing.

### • Networking Workshop (MITACS) – August 2017

Students will have the opportunity to understand the finer points and the importance of networking in industry.

### • Webinars - Throughout the year

Student will have exposure to current topics in meat science.

### • Conferences (CMC, IAFP, iCOMST)

Students will have the opportunity to share their research progress through poster and oral presentations. They showcase their ability to communicate science effectively.



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MEaTnet 2017

## Director's Message

Welcome to the the NSERC CREATE Meat Education and Training Network (MEaTnet) newsletter. In April, 2013, we were awarded \$1.65 million to establish a national meat science graduate training program that supplied highly qualified personnel to the meat industry. As Director, I am proud to see the first graduates from our national meat science training program defending their theses and graduating into one of Canada's premier food industries.



Since the establishment of the MEaTnet, we have been busy educating the next generation of meat scientists and have only now had a chance to begin to communicate our vision. Within the next few pages, we will introduce to you what we are doing, what we have accomplished thus far, and where we hope to go as we work to supply the meat industry with highly trained personnel. Whether you are reading this newsletter because you are interested in becoming a graduate student in the MEaTnet or you would like to host graduate students as interns in your company or business, we would like to hear from you and bring you into our meat science community. We can be reached at [meatnet@ualberta.ca](mailto:meatnet@ualberta.ca), so hope to hear from you.

Heather Bruce, PhD, Associate Professor Carcass and Meat Science, Director MEaTnet



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## MEaTnet By the Numbers

.YEAR 3

**Total students:**

- 24 graduate students
- 4 undergraduate students

**Completed internships: 7**

**Graduates: 7**

**Industry partners: 6**

**Published papers: 12**

**Conference posters and presentations:**

24

## Current Projects

**PATIENCE**

The effects of  $\beta$ -adrenergic agonists and hormonal growth promotants (HGP) on intramuscular collagen cross-link structure and density

**JIAPING**

Price transmission analysis of Canadian beef along supply chain

**ALEICIA**

The prevalence of *Salmonella* in cattle deep tissue lymph nodes and cattle feed



## Meat Education and Training Network (MEaTnet)

What is MEaTnet?

Canada's first meat science graduate specialization is now accepting graduate students, thanks to a \$1.65 million grant from the Natural Sciences and Engineering Research Council of Canada (NSERC) through the Collaborative Research and Training Experience Program (CREATE). The Meat Education and Training Network (MEaTnet) is a virtual organization made up of the University of Alberta, Université Laval, the University of Saskatchewan and the University of Guelph. The organization is based at the University of Alberta under the direction of Dr. Heather Bruce and has developed a shared graduate studies curriculum between all four universities and an intensive hands-on skills training course at Olds College in Alberta.

The MEaTnet program was designed for and with industry so that graduates from the program are "job-ready" for leadership positions in industry, government or academia. The program has opportunities for bilingual learning and offers industry research internships. It is training graduate students to apply globally-respected, state-of-the-art knowledge to successfully innovate solutions that support a high value Canadian meat industry. Through internships, graduates work with industry partners for several months to conduct industry-focused research and participate in company day-to-day activities. After completing the program, students receive MSc or PhD degrees from their respective universities.

With the average age of meat industry managers above 50 years old, the MEaTnet program will meet industry's growing demand for highly trained personnel. The program will train over 50 graduates by 2020, and accelerate their entry to middle management positions in industry and government. In the coming years, there will also be opportunities for industry professionals wanting to upgrade their skills for careers in the meat industry. Also, those companies with numerous employees in a supervisory capacity, particularly persons in management, floor supervisors, processors, product developers and government policy advisors are anticipated to be interested in upgrading their skills.



Companies that have specific programs guaranteeing quality and tenderness would benefit from graduates from the MEaTnet, as our graduates often have training in both meat safety and quality.

The Meat Education and Training Network also offers substantial opportunities for companies to partner in

research projects addressing concerns in meat quality through Drs. Heather Bruce, Ira Mandell and Walter Dixon, meat safety with Drs. Lynn McMullen, Michael Ganzle and Linda Saucier, the economics of the meat industry with Drs. Ellen Goddard and Sven Anders, and product development with Drs. Mirko Betti and Phyllis Shand.

Partnerships with Agriculture and Agri-Food Canada in meat safety with Dr. Tineke Jones of AAFC Lacombe and in meat quality and product development with Dr. Zeb Pietrasik add value to the MEaTnet program and offer students and trainees further opportunities in a federally-regulated environment. For more information on the MEaTnet, contact Dr. Linda Ho at 780-492-9349, or visit our website [www.meatnet.ualberta.ca](http://www.meatnet.ualberta.ca).

## Meat Education and Training Program Design



## Current Projects

**ARENNA**

Consumer purchase intentions for carnosine-enhanced pork – a functional food

**HENRY**

Meat stability as influenced by micronized lentil flour and its component

**DANIELLE**

Effect of water activity on *Escherichia coli* inactivation using high pressure carbon dioxide

**BRIAN**

Evaluation of microorganisms in equine slaughter facility

**MAHBUB**

Alternative strategies for horse meat harvest to ensure product quality and safety for export markets

**MAIDAH**

Relationship between beef quality grade and collagen biochemistry

**SHAHID**

Relationship of cattle production practices and muscle protein with dark cutting

## Current Projects

### KAIXING

Effect of starter culture on taste active amino acids and peptides in dry fermented sausages

### WENXIN

Functionality of mechanically separated pork compared to mechanically separated poultry

### ARISHA

*Salmonella* survival to desiccation

### PHILIP

Pork belly quality; Protein and Lipid oxidation in bacon

### BRAD

Thermal inactivation of heat resistance *E. coli* in ground beef

### DARSHIKA

Utilization of lentil phenolic compounds to control protein and lipid oxidation in mechanically separated chicken

### DANIELLE B.

Bacteriocin efficacy against *Listeria monocytogenes* and resistance development

In this newsletter, we profile two students that recently completed their internships and their degrees at the University of Alberta. We spoke first with Arisha Seeras, our newest M.Sc., about her experience as a graduate student in the MEaTnet, and how it benefited her.

## Graduate Student Profile: Arisha Seeras

**How did your research project help you during your internship?**

As part of my research program, I had to take courses related to meat science. This was extremely helpful in my internship because I was able to identify the parts of the animal during slaughter. The research itself is useful because there are hands on experiment with science equipment that you do not get during an undergraduate program.

**How do you think the research project help get you prepared for the meat industry?**

During my undergraduate degree, I was not as exposed to the lab. The research project gave me more insights into different types of equipment and how to work within a budget. I learned how to adapt to problems that arise. In the industry that I learned to follow SOPs and how to manage time.

**What was the most important thing you learned during your internship?**

Making connections with the people you work with. Building successful work relationships will help your career. Although research is different from industry, both experiences are equally important because research provides you with the basic knowledge that will help you succeed in industry

We also spoke with Ivy Ye, who completed her B.Sc. in Food Science and Nutrition, about her experience as an undergraduate student in the MEaTnet, and how it benefited her. Undergraduate students participate in the MEaTnet during their summer break from university, and so are with us from May to August. During their time with the MEaTnet, undergraduate students work on a research project with one of our academics for part of the summer and then intern with one of our MEaTnet industry partners for the remainder of the summer.

## Undergraduate Student Profile: Ivy Ye

**How did your research project help you during your internship?**

Both the research experience and the internship allowed me to compare between an academic life and an industrial life and understand that sometimes there's a difference between the science and the practical world. The knowledge and the techniques I learned from the research definitely helped me understand my job, the science behind what I am doing and why I am doing it. The experience itself allowed me to look at my job differently in some ways. Apart from the knowledge I learned, the internship gave me some ideas of what it is like to work in the meat industry, what are the things I will be doing, what is expected from me and how to work in the meat industry.

**Any advice you would give to students looking for a career in the meat industry?**

I would suggest to them to try out different things and take whatever opportunities they have because one can never know what experience he/she will get at the end and what will the experience lead to. Secondly, food science is a very practical program. Everything learned in class is linked to food industry, lab and the real world. Gaining practical experience would help students with their academic performance.

**What was the most important thing you learned in your internship?**

It is very crucial to have good communication skills in meat industry, especially for Quality Assurance or Food Safety related jobs where you have to consequently interfere and work with other departments. It's never how much you know and how well you can perform individually, but how to work with other people to solve the problems.



## Possible Supervisors

DIRECTOR, MEAT EDUCATION AND TRAINING NETWORK FOR ASSURING MEAT SAFETY AND QUALITY  
Dr. Heather Bruce

Other potential supervisors

Dr. Sven Anders (UofA)  
Dr. Mirko Betti (UofA)  
Dr. Walter Dixon (UofA)  
Dr. Michael Gänzle (UofA)  
Dr. Ellen Goddard (UofA)  
Dr. Lynn McMullen (UofA)  
Dr. Ira Mandell (Guelph)  
Dr. Linda Saucier (Laval)  
Dr. Phyllis Shand (UofS)