

MEAT SCIENCE AND
MUSCLE BIOLOGY
LABORATORY
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MADISON WI 53706

University of Wisconsin-Madison

Meat Science Quarterly:

VOLUME 3 : ISSUE 1

WINTER 2014

UPCOMING EVENTS

- **Wisconsin Meat Processing School**
March 18-19
- **WAMP Annual Convention**
April 3-6
- **Hall of Fame Luncheon**
May 1
- **MMC Fresh Meats School**
May 14-16
- **FSIS Food Safety Summit**
May 20th
- **67th Annual RMC**
June 15 - 18
- **AAMP Convention**
June 19-21

Words from the Director: Jim Claus

Interestingly I recently was on a conference call with AMSA as part of the host planning effort for the RMC and the first question asked was if the lake will be thawed by June. Indeed this has been a cold winter for everyone. However with all of the nice snow cover in the great white north we are fully expecting a very special spring bloom and an exceptional RMC. As many of you know Dr. Robert Bray was elected the first president of AMSA in 1964 at the meeting held in Madison and therefore this RMC will repre-

sent the Association's 50th anniversary. We hope that all of our alums, emeriti, and other friends will be there to attend this exciting meeting. This is shaping up to be an outstanding conference with some very special events which you will read a little more about later in the newsletter. We have had a terrific start to 2014 and the spring semester. The movement on the new facility is heating up which in itself should yield an early spring thaw. As always, keep in touch.

Marion Greaser and Bernard Peck to be inducted into the Wisconsin Meat Industry Hall of Fame

Two new people have been selected for induction into the Wisconsin Meat Industry Hall of Fame and will be honored at a luncheon on May 1, 2014. UW Emeritus Professor Marion Greaser (also MS, 1967 and PhD, 1969) was noted for his research on troponin and titin as well as director of the UW Meat Science and Muscle Biology Program from 1997 to 2009. He was also co-author of a widely used undergraduate textbook entitled "The Meat We Eat". Bernard Peck was the fourth generation of the family to lead the Peck Meat Packing Corporation in Milwaukee's Menomonee River Valley. Before being sold to Sara Lee in 1985 Peck's was one of the larger privately

held meat processors in the US and was noted for the "Emmber's Lean N Tender" product line. He is also a very generous philanthropist for the performing arts in Milwaukee and Florida.

*** More information will be posted on the UW Animal Sciences web site <http://www.ansci.wisc.edu/>

*** A registration form can be found on the last page of this newsletter.



UW

Meat Science

67th Annual Reciprocal Meat Conference;

A Wisconsin Tradition



On June 15th the welcome reception will set the “tone” for an extraordinary RMC. The reception will be on the roof top of the Monona Terrace overlooking the lake on one side and the State Capitol in the other side. Processed meats, cheese, and beverages will be provided in a great setting for visiting with colleagues from all over the US and around the world. Dr. Kauffman will contribute to the special “tone” of the reception because his band (Royal Ambassadors Old Time Band) will be providing the music for the reception. After a full day of the RMC technical program on Monday at the Monona Terrace, everyone will head to the Mallards Ballpark for an entertaining and enjoyable picnic that you just won’t want to miss. There are so many unique things planned for the picnic I’d like to tell you about but we want these to be a surprise so I’d just say the food is going to be delightful and plentiful, so come hunger. Tuesday’s technical program will occur on the beautiful UW campus starting out at Union South before moving across the street in the afternoon for a plethora of reciproca-tion topics, open house venues, and other events. As you may recall, on-campus parking is rather limited. However, for those staying at the conference hotels, a chartered bus service will provide all the necessary transportation to make attending all of the meetings and functions rather convenient.

A very special recognition is being planned by Gene Allen, Don Beermann, and Cameron Faustman relative to announcing the Robert G. Cassens Mentor Recognition Award which they have been instrumental in establishing for AMSA. The endowment to establish this award is now in excess of \$27,000. A social gathering is planned Tuesday afternoon, June 17th, during the RMC in which UW MBL alums, post-docs, associates, and spouses are invited to attend the first announcement of this award. During this gathering the group will have an opportunity to visit and tour MBL along with hearing an exciting update on

the status of the new MBL. In addition, the earlier Robert W. Bray Mentor Recognition Award will be mentioned and acknowledged with the remaining members of Dr. Bray's family expected to be in attendance. Also associated with this gathering Bob Kauffman (Emeritus Professor) will give an interesting presentation on the “*History of the University of Wisconsin’s Meat Science and Muscle Biology Laboratory*”. This presentation will include the beginning of the UW Meat Science & Muscle Biology program in 1927 to the present. It will highlight the people (especially Dr. Robert W. Bray) involved, the buildings and facilities used, the program’s cooperation with the Wisconsin Meat Industry (including its association with Oscar Mayer & Co. and the Wisconsin Association of Meat Processors), and its significant research accomplishments (with emphasis on the PSE story). Those attending will be

provided a complete written report. Although this presentation will occur during the RMC, no registration is required. As such this presentation is open to everyone interested in hearing about the rich history of the Meat Science

and Muscle Biology program at UW. This would also be a great chance to meet some of our field’s past and present premier scientists and industry visionaries we are expecting will attend as part of their Alumni/Emeriti gathering.

The RMC awards ceremony and banquet will occur Tuesday evening at the Monona Terrace. On Wednesday morning the technical program, at the Monona Terrace, will entail a full morning of content-rich topics before concluding at noon. UW and Oscar Mayer (RMC co-hosts) through the very special effort and dedication of the members of 12 host committees (~50 volunteers and counting) have championed a RMC we believe will clearly exemplify the selected theme of the RMC which reads “*Honoring the Past and Inspiring the Future*”.



Dr. Andy Milkowski Receives Scientific Achievement Award

AMI Foundation Scientific Achievement Award

University of Wisconsin Adjunct Professor of Meat Science Andrew Milkowski, Ph.D., recently received the American Meat Institute (AMI) Foundation Scientific Achievement Award during an awards breakfast at the International Production & Processing Expo, in Atlanta, Georgia.

Milkowski previously worked for the Oscar Mayer division for Kraft Foods where he led food safety research programs. During his tenure there, Milkowski served on AMI's Scientific Affairs Committee. As one of the nation's leading experts on nitrite functionality and safety, Milkowski was tapped to chair AMI's Nitrite Task Force in the late 1990s. Milkowski and the task force helped advance scientific knowledge about nitrite's safety and benefits through efforts that contributed to the National Toxicology Program's (NTP) seminal conclusion that nitrite is not a carcinogen at the levels used.

Milkowski served on the Foundation's Research Advisory Committee since 1999 and was the Director of Health and Wellness at AMI for three years. He also helped lead efforts to prevent and ultimately eliminate *Listeria monocytogenes* on ready-to-eat meat and poultry products.

In presenting the award, AMI Chairman Greg Benedict, Chief Operating Officer and President of American Foods Group, said, "Dr. Milkowski is truly one of the nation's brightest scientific lights in food safety and meat science. His contributions are numerous and make him the very deserving winner of the 2014 AMI Foundation Scientific Achievement Award."

Dr. Milkowski earned his Ph.D. in biochemistry in 1976 from the University of Wisconsin and his BBS from the University of Illinois. Milkowski serves on the Executive Board of the Food Research Institute.

That New ConPro Smell; Handtmann Delivers

Unquestionable Excitement!

During the week of February 23rd, the University of Wisconsin Meat Science and Muscle Biology Laboratory received 7 shipping crates containing shiny-new pieces of processing equipment from Handtmann Corporation Inc. This new addition, a Handtmann ConPro 200 System, is a state of the art co-extrusion technology (using sodium alginate as the casing) comprising of VF616 and VF608

stuffers, co-extrusion heads, and an automated linker system. We are excited to start using this equipment and will be incorporating this technology into our meat science classes, research projects, and short courses & other Extension programs. A heartfelt thank you goes out to Handtmann for their support of the UW Meat Science program!



Graduate Student Spotlight: Chen Du

Chen Du is a self-motivated, analytic master student with strong background knowledge, experiment skills and techniques in meat science and food research field. She worked with Dr. Claus on the project Nitrite-embedded Packaging Film Effects on Fresh and Frozen Beef Color Development and Stability as Influenced by Meat Age and Muscle Type. Nitrite-embedded packaging film (NEF) is a novel packaging film referred to as FreshCase® by Curwood. Different muscle types of beef steaks were packaged with this nitrite embedded film and then went through fresh and frozen display in this project. Chen found consideration should be given to providing sufficient time for nitric oxide myoglobin development when using NEF which may be influenced by meat age and muscle differences. NEF packaging has potential to extend fresh beef color display life. NEF appears to offer the opportunity to display bright red beef in frozen display by limiting typical effects of photooxidation. The work was published in 2013 and right now Chen is working on the Inhibition of Lipid Oxidation in Turkey Meat by Encapsulated Phosphate. The concepts

included in this project are: Polyphosphate can act as a chelator to inhibit lipid oxidation in processed meat product but they are easily hydrolyzed by phosphatases during pre-cook storage time; Encapsulation could protect incorporated polyphosphates from being hydrolyzed during this period; Ideally, the polyphosphates will be released during cooking and function as the antioxidant during meat processing and storage.



Dr. Mark Richards:

Invited Speaker at Physiology Symposium

The American Society for Animal Sciences (ASAS) will be holding their Physiology Symposium, on March 18th, 2014 in Des Moines, Iowa,. This year, Dr. Mark P. Richards has been invited to give a talk on vitamin E metabolism in poultry. The Physiology Symposium will take a broad look at metabolic activities and pathways that impact daily life and consumable products of today's livestock industry. For more information on the conference, please visit: <http://takingstock.asas.org/?p=10375>



Master Meat Crafter Graduation: Class of 2014

Twenty-one people were awarded the distinction of a Master Meat Crafter on Friday, January 17th. This second graduating class of the Master Meat Crafter Program completed the two and a half year program by giving individual presentations and participating in a graduation ceremony in Madison.



“Congratulations to all the Master Meat Crafters for their commitment to developing and perfecting their skills,” said Department of

Agriculture, Trade and Consumer Protection (DATCP) Secretary Ben Brancel. “The breadth of projects completed by these graduates will benefit not only their individual meat businesses but the entire specialty meats industry.”

The Master Meat Crafter Program allows participants to build on their experiences in meat science and meat processing through a comprehensive curriculum of workshops, various homework assignments, and a plant research project. Topics included fresh meats, curing, fermented & dried products, cooked & emulsified products, food safety & meat microbiology, and development/implementation of HACCP (Hazard Analysis and Critical Control Points), to name a few. Each Master Meat Crafter also completed a mentorship component, sharing what they learned with an employee or another individual.



“Master Meat Crafter graduates set the Wisconsin meat industry apart as a leader in the nation,” added Brancel. “We welcome anyone from other states to come learn from our Master Meat Crafter Program.”

This one-of-a-kind program allows graduates to earn the distinction as a Master Meat Crafter. Each graduate will be able to highlight their expertise and knowledge by use of the Master Meat Crafter logo on their product labels, signage, or in other prominent ways.

The Master Meat Crafter Program has been developed in conjunction with the Specialty Meat Development Center and is supported by DATCP, University of Wisconsin Meat Science Extension, University of Wisconsin and the Wisconsin Association of Meat Processors. The goals of the program are to: 1) provide participants with well rounded, in-depth, and comprehensive knowledge about meat science/meat processing principles, 2) provide development opportunities for the future meat industry leaders, and 3) help ensure the US meat industry remains strong and viable for years to come. It was created and is currently organized by Dr. Jeff Sindelar, University of Wisconsin-Madison Associate Professor and Extension Meat Specialist.



Meat Science Trivia!

Rack your brain and see how much meat science knowledge you've retained.

Answers to the Winter trivia questions will appear in the Spring issue.

Good luck!

1. What ingredients should always be added first when making a brine?
2. What is the legal limit for sodium nitrite in bacon?
3. What age range must a calf be to be considered 'veal'?
4. What is the main microorganism of concern in RTE meats?
5. What causes fattening-out in an all-beef hot dog?
6. Name two of the benefits of pre-rigor meat.
7. What is the key ingredient that contributes to the crumbly texture of chorizo and how does it work?

Cassens Mentor Recognition Award

The American Meat Science Assn. has a program called the "Mentor Recognition Program" that allows individuals and organizations to recognize and honor mentors who have made special contributions to their careers, etc.

"A fundraising drive for establishing a mentor recognition in the name of Robert Cassens was started in September, 2013. The funds raised from the mentor recognition will be used to support the efforts of PhD-level graduate students in completing and communicating their research, and establishing professional networks that will sustain their meat science careers. The mentor recognition is being coordinated by a committee led by Gene Allen, Donald Beerman & Cameron Faustman."

The committee, with Bob's approval, drafted a proposal and got approval for the award as required by AMSA. As a result of the excellent database of names, addresses and career information maintained for alums, postdocs and associates of the Muscle Biology Laboratory, the

committee was able to contact almost every living person who has been associated with the program. The response has been very positive. To date there have been 44 contributions that total to \$29,204. A minimum of \$25,000 is now required by AMSA to establish such an award. Additional contributions have been committed before May 1, the deadline for a bass relief plaque that is being done by alum David Anderson. The plaque will be presented to Bob Cassens during announcement of the award at RMC in Madison this June. The names of those who contribute \$500 or more will be included on the plaque as "Charter Recognition Members."

Anyone interested in making a contribution can do so online at: <http://www.meatscience.org/cassens/> in the name of "Robert G. Cassens," or contact Tom Powell at tpowell@meatscience.org. All gifts for the award go into an endowment in Bob's name that is managed by the AMSA Foundation. Each year 4.5% of the endowment is used in support of the stated purpose above for the Robert G. Cassens Mentor Recognition Award.

Meat Science Trivia—Answers from Fall Issue

How did you do? Check your answers below to see how well you answered last edition's questions.

1. What is the only sausage product that was developed in the US?
⇒ **Lebanon bologna**
2. What is the limit (percentage) of added water in fresh sausages?
⇒ **3% water added**
3. What does PFF stand for?
⇒ **Protein Fat Free**
4. What is the major microorganism that sodium nitrite is used to control?
⇒ ***Clostridium botulinum***
5. According to Appendix A, what temperature achieves an instantaneous 7 log lethality?
⇒ **158°F**
6. What is the smallest repeating unit in muscle tissue?
⇒ **Sarcomere**
7. What is the number one spice used in the meat industry?
⇒ **Mustard**

Thank You for Reading!

Greetings,

We hope you have enjoyed the Winter 2014 issue of the University of Wisconsin-Madison, Meat and Muscle Biology Laboratory: *Meat Science Quarterly*. Please keep an eye out for our Spring edition coming your way in the near future. If you have any questions or comments, please email them to:

MBLNews@ansci.wisc.edu

REGISTRATION

**Wisconsin Livestock & Meat Council
Annual Meeting
Wisconsin Meat Industry Hall of Fame Induction**

*May 1, 2014
Sheraton Madison Hotel
706 John Nolan Drive
Madison, WI*

- 10:30 a.m. Wisconsin Livestock & Meat Council Annual Meeting
- 12:00 p.m. Luncheon
- 12:45 p.m. Scholarship Recipient Recognition
- 1:00 p.m. Wisconsin Meat Industry Hall of Fame Induction
2014 Inductees: Marion L. Greaser
Bernard J. Peck

Please return the registration form to:

Jeff Swenson
Wisconsin Department of Agriculture
Division of Agricultural Development
2811 Agriculture Drive
P.O. Box 8911
Madison, WI 53708-8911

Make check payable to: Wisconsin Livestock & Meat Council
Please respond before **April 15, 2014**

**Wisconsin Livestock & Meat Council Annual Meeting
Wisconsin Meat Industry Hall of Fame**

Name(s) _____	<u>Number</u>	<u>Total</u>
_____	Luncheon: _____	\$ _____
_____	\$35.00 per person	

Company: _____

Address: _____
