

# DAIRY PIPELINE

## NORM OLSON: DAIRY INDUSTRY PIONEER, CDR VISIONARY, AND GENTLEMAN

Norm Olson, creator of the first dairy research center in the U.S. and a University of Wisconsin Food Science Professor, died on May 10, 2020. Norm leaves behind a tremendous legacy in the dairy industry.

In 1976, Norm established the Walter V. Price Cheese Research Institute (WVPCRI) at the University of Wisconsin-Madison, which eventually developed into the current Center for Dairy Research in 1986. Dr. Olson was an internationally recognized dairy scientist and researcher whose work is still used in today's dairy industry. He mentored dozens of graduate students and worked closely with U.S. dairy processors, helping them improve their products and develop new ones. But the first thing people say about Norm is that he was a gentleman.

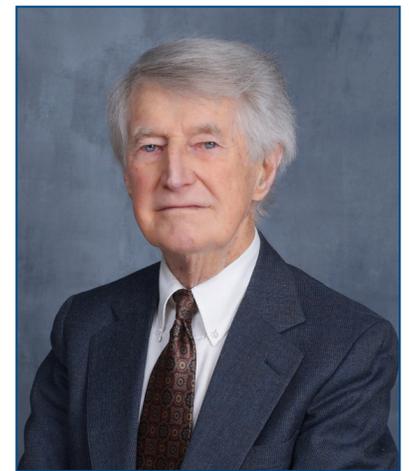
"Norm was always happy, and he always brightened your day," said Carmen Huston, CDR Department Administrator. "He was a wonderful man and he always had a smile on his face when he was in the office."

Mark Johnson, CDR Assistant Director and Distinguished Scientist, was the first employee hired by Norm. "It was my lucky day when Norm offered me a position as Program Coordinator at the WVPCRI in 1979. Norm was my mentor and friend ever since."

CDR Director John Lucey said, among all of Norm's accomplishments, his lasting legacy will be the creation of the WVPCRI, and, ultimately, CDR. Norm had

the vision and the unique ability to bring together the dairy industry, dairy stakeholders and the University of Wisconsin.

"Norm was this extraordinary figure who was able to bridge all of these key stakeholders and get them on board with this new concept," Lucey said. "If you think about it, that's an amazingly complicated challenge... he laid down a template for us to try to continue."



Dr. Norm Olson, UW Emeritus Professor

Tom Szalkucki, a member of the CDR Senior Management Team, agreed, "Norm's genius was the way he set up CDR to allow them to focus on industry. He understood that academic departments had their own priorities and that's why he set up CDR as a separate CALS [University of Wisconsin-Madison College of Agriculture and Life Sciences] center."

### Walter V. Price Cheese Research Institute

As a leading dairy scientist and someone who had friends and colleagues in the dairy industry all over the world, Norm recognized that research was crucial to advancing the U.S. dairy industry. Norm did sabbaticals or exchanges in New Zealand, Holland, Ireland and other parts of Europe like Italy and he came back with new ideas and knowledge.

"He felt the U.S. was falling behind the rest of the world," Lucey said. "And he felt that the U.S. was going to continue to fall behind unless we could find ways to →

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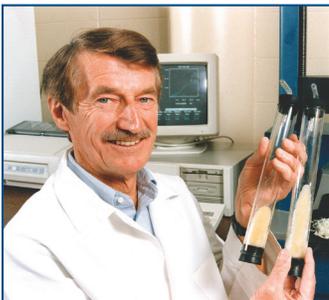
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fund dairy research and apply that research to solve the problems of the industry. That was his driving force to set up the WVPCRI and then later the CDR.”

In addition, Norm saw what was going on at home in the U.S. dairy industry. Dairy plants were becoming increasingly mechanized, which created the need for more highly trained dairy technologists. The University of Wisconsin-Madison had short courses available to the dairy industry, but they weren’t able to meet the increased demand from the dairy industry for education. Norm, a University of Wisconsin-Madison Food Science professor at the time, saw this need and began to develop a concept for a center that could fulfill this role.

In 1976, Norm created the WVPCRI with support from the Wisconsin state legislature. The institute operated as a center within the Department of Food Science, studying cheese and conducting basic research. In the beginning, graduate students performed much of the research and worked with Dr. Olson to disseminate the findings to the dairy industry. The institute also provided a pilot plant for cheesemakers and suppliers to test new procedures and ingredients. The institute helped establish many breakthroughs for the industry.

“One of the first projects I worked on was to test the potential commercial use of a fermentation produced chymosin,” Johnson remembers. “It was a very novel idea at the time and proved to be somewhat controversial. I am sure Norm smiled when we did the same thing many years later on the potential of a chymosin extracted from baby camel’s stomachs. This was before it was commercially produced by fermentation.”



Norm Olson in the lab, late 80's.

Norm was proud of the institute’s work, but he still felt that Wisconsin needed a fully-fledged research center dedicated to dairy products. While the WVPCRI provided research insights to the industry, it was small and did not have the funding available to provide the industry with the amount of hands-on training and technical experience that Dr. Olson knew the industry needed.

### The First Dairy Research Center in the U.S.

In the early 1980s, the country had developed a mandatory milk marketing order that would allocate a portion of the milk check to assist in efforts that would increase demand for milk and milk products. In 1985,

Norm worked with Wisconsin Milk Marketing Board (WMMB) CEO Will Dahl and Director of Research and Education Les Lamb to create a dairy research center funded by WMMB through the new dairy checkoff program with the University of Wisconsin-Madison supporting the administration of the center.



Dr. Norm Olson, John Chilsen WI State Senator, Laurence Weinstein President of the UW Board of Regents cutting a braided rope of mozzarella string cheese at the dedication ceremony for CDR offices.

In 1986, thanks to the help of more than 41,000 Wisconsin dairy farmers, a 10-year \$1.5 million trust fund was set up through WMMB to provide the returns that would fund the CDR as a new center located in the University of Wisconsin-Madison CALS.

Because of Norm’s vision, CDR was uniquely set up to succeed. Unlike any other previous organization, when Norm created CDR he brought together the dairy industry, national and regional dairy stakeholder organizations and the University of Wisconsin. Norm was able to build relationships and trust with the WMMB (now Dairy Farmers of Wisconsin), the National Dairy Promotion & Research Board, and Dairy Management, Inc. Because of these partnerships, CDR began to receive funding from both the state and federal dairy checkoff programs. To this day, the dairy checkoff program and support from industry provides steady funding that allows CDR to grow its research and improve its services and outreach to the dairy industry.

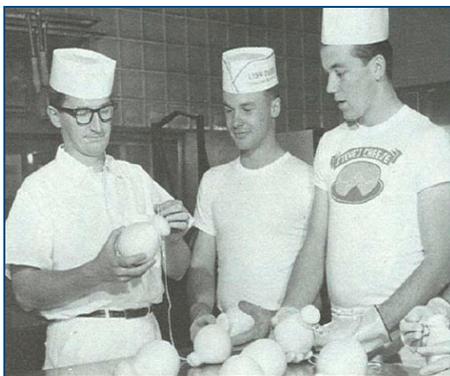
“One of the things that helps sustain CDR is the commitment of dollars by the dairy checkoff program,” Szalkucki said. “Norm understood the importance of a sustained, core funding base. We have not experienced the dramatic up and down cycles of funding for staff/programs that some of the other research centers have.”

“He seemed to be able to pull strings or maybe it was favors or maybe just the strength of his personality,” Johnson said. “But the Institute and the Center always seemed to be adding new people and expanding our services. He had great vision to do so.” ➔

## Education, Research and Industry Support

Led by Norm, CDR hit the ground running. There was a lot of demand and need in the dairy industry for training, product development and technical support. At the time, the industry was struggling with things like defects in commodity cheese. Research was needed by the industry to solve some of its challenges. “The industry was having a difficult time,” Szalkucki said. “When you don’t have the research backing to understand what’s going on with that or you don’t have people doing research in that area you can’t solve the problems... You’ve got to have folks who are active in those research areas.”

One of the first successful industry connections involved working with culture houses to find improved cultures for cheesemaking. Cheesemakers were struggling with bitterness in their cheese.



Norm Olson in the dairy plant with students, early 70's.

Eager to begin doing research that could be applied in industry, CDR began experimenting with new cultures including *Lactobacillus helveticus*. Mark Johnson had heard that the culture created a wonderful flavor in cheese, but he had trouble sourcing the culture since so few people were using it in their cheesemaking at the time. When he finally acquired some, he and the CDR team began experimenting with the culture in Gouda cheese and eventually discovered that not only did the culture help with eliminating bitterness, but it also created a wonderful nutty sweet flavor profile in aged cheese. Dr. Johnson’s applied research and partnership with industry led the way for a wide adoption of this culture in a variety of cheeses

In addition to researchers and scientists, Norm recognized the need for cheesemakers. In 1991, Norm hired John Jaeggi as the center’s first cheesemaker. Today, John leads the CDR’s Cheese Industry & Applications Program. “I was a business major but had made Swiss, Muenster, and many varieties of specialty cheese in our family plant,” Jaeggi said. “I’ll never forget Norm’s quote during my interview. He said, ‘We have all sorts of food scientists and microbiologists. But we do not have anyone with a cheesemaking background.’”

Norm not only saw a need in the industry for research but also for education opportunities and technical outreach

and support for the dairy industry. “Norm loved to go to dairy plants and help them,” Lucey said. “He saw the need for product development support. He saw a gap in the industry and saw how CDR could help.”

Norm helped establish CDR as a leader in education and training for the dairy industry. CDR’s Cheese Technology Short Course, arguably, CDR’s flagship short course, is based off a Chemistry, Microbiology and Technology of Cheeses that Norm taught for dairy industry professionals.

With all of the traveling that Norm did to other cheese producing countries, Norm saw the importance of helping the U.S. dairy industry develop some of the specialty cheeses that, at the time, were mostly only produced in foreign countries.

“Through Norm’s leadership, he worked with the WMMB to establish the Specialty Cheese Program,” Jaeggi said. “The goal of the Program was to shift manufacture from commodity cheeses such as Cheddar and Mozzarella to the manufacture of value-added specialty cheeses. It was through the Specialty Cheese Program that the Wisconsin Master Cheesemaker Program was born.”

## Industry Impact Lives On

Norm’s impact and legacy on the dairy industry is still very much alive today. His research helped develop breakthroughs in a number of important areas in the dairy industry, including:

- ▶ Italian style cheeses
- ▶ Fermentation/ripening/cultures/enzymes/renneting
- ▶ Cheese yield/standardization/membrane filtration
- ▶ Cheese functionality

He earned numerous awards and achievements from his long career, including President of the American Dairy Science Association (ADSA), distinguished service award from the University of Wisconsin CALS, ➔



CDR Directors (past and present): Rusty Bishop, John Lucey, Mark Johnson (Assistant Director), and Norm Olson.

awards from Institute of Food Technologist (IFT) for technology transfer. He was a fellow in both ADSA and IFT, and in the early 2000s he was listed as a highly cited and influential scientist by ISIHighlyCited.com (one of only 7 from the University of Wisconsin-Madison at that time). He was active in the International Dairy Federation (IDF). Norm had more than 250 publications and was widely recognized as one of the top dairy scientists in the world. Earlier this year (2020), Dr. Olson received the WCMA Babcock Award, which recognizes the contributions of those in education or affiliate organizations in the pursuit of dairy industry innovation and excellence.

“Norm was a wealth of knowledge,” Johnson said. “My fondest memories of Norm are when we would sit down together, and he eagerly shared his wisdom. We would sit for hours discussing cheese manufacture and the science of it.”

Johnson added: “Norm had more than a vision, he enabled others to take the Center to new heights and inspire others to pursue their own vision after he was gone. He laid a great groundwork for us to build on. He was really looking forward to the new CDR facility and thought that the future was bright.” 🌟

## WCMA, CDR ANNOUNCE SIPPLE AS WINNER OF NORM OLSON FAMILY SCHOLARSHIP

The Wisconsin Cheese Makers Association (WCMA) and Center for Dairy Research (CDR) are pleased to announce that University of Wisconsin-Madison graduate student Lauren Sipple has been awarded the 2020 Norman F. Olson Family Scholarship.

Named after the creator and first director of the Center for Dairy Research, this scholarship is awarded to students majoring in food science at UW-Madison. WCMA and CDR each contribute \$1,000 to the annual scholarship, awarding the recipient with a total of \$2,000 to continue their studies relating to the dairy processing industry.



Lauren Sipple

“WCMA is proud to play a role in the academic enrichment of the next generation of leaders in the dairy processing industry,” WCMA Executive Director John Umhoefer said. “Lauren Sipple is a standout graduate student, applying her intelligence and work ethic to advance the dairy industry, and we are pleased to support her research.”

Sipple was awarded a Bachelor of Science degree from UW-Madison, before earning her master’s degree in sensory and consumer attributes of fluid milk at North Carolina State University. She is now pursuing a doctorate at UW-Madison, studying the physical properties of ice cream. Sipple is also serving on a CDR-trained sensory panel, evaluating dairy samples for general research and industry projects.

“Lauren Sipple is an excellent student who is aiming her professional career at serving the dairy processing industry,” Director of the Center for Dairy Research Dr. John Lucey said. “We’re pleased to join with WCMA to confer the Norm Olson Scholarship to this future PhD in dairy.” 🌟

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## CURD CLINIC: CAN I ADJUST MY CHEESE MAKE TO EXTEND THE CHEESE’S SHELF LIFE?

*Curd Clinic Doctors: Mark Johnson, Dean Sommer & John Jaeggi*

The main reasons the shelf-life of many cheeses is shorter than desired is excessive protein breakdown (proteolysis) and microbial growth. There are some relatively simple adjustments that can be made during the cheese make that can slow down proteolysis and reduce the growth potential of microorganisms.

### Emphasis on Milk Quality

High quality milk and sanitation practices are especially important for cheeses that we want to extend the shelf life. The longer we hold cheese, the greater the risk of defects, such the development of undesirable flavors including bitterness and unclean off-flavors.

We recommend aiming for standard plate counts of no more than 5,000 cfu per mL and somatic cell counts no higher than 200,000 per mL of raw milk. Having high numbers of bacteria or somatic cells in the milk will impact the flavor and textural quality of the cheese, including increased risk of gas formation, especially the longer the cheese is held.

### Protein Fortification

If your plant currently uses ultrafiltration or other membrane processes to fortify your cheese milk, you could consider a slight increase in solids/protein levels. Increasing the casein content of milk will lower the FDM of the cheese and that may be sufficient to increase shelf-life but, if combined with moisture reduction, it will have an even greater impact. By adding casein (protein) in conjunction with the recommended adjustments listed below you can improve efficiency (off-set slightly the reduction of fat and moisture).

## For Mild Cheeses: Consider a Less Proteolytic Starter Culture and Less Wet Acid

To make a long hold cheese it is best to work with your culture house representative to identify a less proteolytic starter culture. In general, a *Streptococcus thermophilus* or a *Lactococcus lactis ssp cremoris* may be preferable to use as your acid driving cultures if your time schedule and culture rotations allow. It is also recommended you look at your adjunct flavor cultures. Some adjunct cultures promote proteolysis while others can contribute to wet acid development.

Specific starter culture strains along with increased inoculation rates are meant to increase rates of acid development while increasing proteolytic activity. Wet acid is the drop in pH from inoculation to the point of whey drainage during predraw and pump over. For example, development of wet acid is desirable in Mozzarella cheese to solubilize calcium resulting in a cheese that melts and stretches well on a pizza.

To extend the cheese shelf life, it is helpful to develop less wet acid in the cheese vat through use of less active cultures, less ripening time, and adjustment of ripening and cook temperatures. To help monitor acid development in your cheesemaking process we encourage, at minimum, monitoring pH at three critical junctures; set pH, pump over pH, and salting pH. For instance, if making Cheddar and you normally pump it over at pH 6.10 you might want to consider pumping over at pH 6.25. Similarly, for Mozzarella; if you normally pump the cheese onto the tables at curd pH 5.90, you can try pumping to the table at curd pH 6.10 which will help extend the shelf life of the cheese due to more calcium retention in the curd.

## Increase Calcium Chloride so you can Decrease Rennet (useful in HIGH moisture cheese)

If reduction in moisture is not amenable for your economic situation and you are making a high moisture, soft cheese we recommend using a much less proteolytic rennet and less of it. This may require increasing the set temperature and using high amounts of calcium chloride. This will help slow proteolytic activity in the cheese through less rennet/coagulant usage. You need to target the right calcium chloride addition rate for your cheese. Too much calcium chloride can result in a corky body and an astringent or bitter taste. Keep in mind the legal limit for calcium chloride is 6 ounces per 1,000 pounds of milk (it is not recommended to increase to this level). Another recommendation is to use a less proteolytic rennet. There are a number of these coagulants commercially available. These are especially helpful for slowing down cheese breakdown as proteolysis slows down.

## Increasing Salt/Lowering Moisture

The amount of salt in cheese is very important from

a water activity ( $a_w$ ) standpoint, which, in turn, can impact shelf life as it both reduces proteolysis and microbiological growth. By increasing the salt content, you will lower the water activity and increase shelf life especially in reduced moisture cheeses. However, in high moisture cheeses you may not be able to achieve the salt level to decrease water activity sufficiently to inhibit proteolysis or microbial growth without harming the quality of the cheese. It will be too salty.

Cheesemakers can look at each of their cheese varieties and push the salt content up, closer to the limit that



Gary Grossen, CDR adding salt to the cheese vat.

will still result in a high-quality cheese. We encourage cheesemakers to keep it reasonable; aim to increase salt targets 0.1-0.3 percentage points higher depending on your current salt levels. For example, if your salt level for Cheddar is normally

1.60%, you may want to push it up to 1.70% to 1.90%. Of course, there will be cheese flavor and textural issues if you exceed generally recognized acceptable limits for your particular variety.

## Keep an Eye on Lipase

For those cheeses that use lipase such as Blue and Italian style cheeses, you need to understand the timeframe when the cheese will be hitting the market. The flavor window for your particular cheese variety will vary depending on the type and amount of lipase used (kid/goat, calf). It's important to know what time frame the cheese will be utilized or sold on the retail shelf; otherwise you risk a cheese becoming "soapy" and bitter if the cheese is being held in your coolers for a period longer than is typical.

## More Resources

CDR staff have done detailed research on extending the shelf-life on several specific cheese varieties including Cheddar, Block Gouda, LMPS Mozzarella, Cream and Mascarpone cheeses. Please reach out to CDR for help and technical advice on your specific variety:

[www.cdr.wisc.edu/cheese/staff/cheese](http://www.cdr.wisc.edu/cheese/staff/cheese)

There are also many resources and information on the CDR website: [www.cdr.wisc.edu](http://www.cdr.wisc.edu)

If you are a Wisconsin manufacturer or member of the CDR Industry Team, you can access the CDR Insider, which includes additional in-depth resources and articles on a wide variety of topics. More information:

[www.cdr.wisc.edu/about/cdrindustryteam](http://www.cdr.wisc.edu/about/cdrindustryteam) 🌟

# DAIRY PLANT PRACTICES TO STAY SAFE DURING COVID-19

In this ever-changing situation, CDR is offering this article (written July 2020) with some guidance and strategies to help keep your plant and employees safe during the COVID-19 outbreak.

“During these unprecedented times, all of us need to think clearly. Think about how your employees will react during this pandemic. Some may feel fearful or helpless.” says Marianne Smukowski, CDR Dairy Safety & Quality Coordinator. “We all need to think what we can do to feel safe and healthy and put out a safe and wholesome food product.”

Although there are still a lot of unknowns concerning COVID-19, there are a couple key points that are important to understand. The Food and Drug Administration (FDA), European Food Safety Authority (EFSA), and others have stated that there is no current evidence that food is a source or transmission route for the virus.

According to guidance from the Centers for Disease Control and Prevention, “It may be possible that a person

can get COVID-19 by touching a surface or object that has the virus on it and then touching their own mouth, nose, or possibly their eyes. This is not thought to be the main way the virus spreads, but we are still learning more about how this virus spreads.”

The Occupational Safety and Health Administration tells us that “The virus is thought to spread mainly from person-to-person,” including:

- ▶ Between people who are in close contact with one another (within about 6 feet).
- ▶ Through respiratory droplets produced when an infected person coughs or sneezes. These droplets can land in the mouths or noses of people who are nearby or possibly be inhaled into the lungs.

## Best Practices

During a webinar on June 3 coordinated by the Wisconsin Cheese Makers Association, Dr. Jonathan Meiman, Wisconsin Chief Medical Officer and State Epidemiologist for Occupational and Environmental Health, offered some key points and best practices for dairy plants. ➔

## CDR PANDEMIC GOOD MANUFACTURING PRACTICES (for Production Areas)

Each plant needs to implement its own pandemic Good Manufacturing Practices (GMPs). CDR has implemented a Pandemic GMP for its dairy plant that provides guidance on a number of issues, including what personnel are allowed onsite, scheduling of essential employees and plant activities, what personnel must do before entering the production areas, etc. Below is an excerpt from the CDR Pandemic GMP directing what personnel should and shouldn't do in the production areas.

**WASH AND SANITIZE** hands and forearms up to the elbows **EVERY TIME YOU ENTER** production areas (sanitizer located at entrances). Hands need to be washed **FOR AT LEAST 20 SECONDS**. When washing, hands need to be scrubbed vigorously in the crevices of the hand, fingertips, under fingernails and the space between the fingers with warm water and soap. Proper hand washing followed by hand sanitizing is essential to avoid cross-contamination.

Coughing/sneezing should be done into the elbow/shoulder and away from products, equipment, **AND YOUR COWORKERS**. After coughing/sneezing, wash and sanitize hands and forearms before returning to work.

Eating (this includes candy, gum, toothpicks, and cough drops) and drinking are **RESTRICTED** to designated, socially distanced areas only. After eating and/or drinking, wash and sanitize hands and forearms before returning to work.

To reiterate, each time you cough, sneeze, blow your nose, touch your face, take a drink, touch a piece of equipment, utensil, pen, keyboard, etc. that was not recently cleaned and/or sanitized, **AND ESPECIALLY IF YOU TOUCH ANY TYPE OF HANDLE OR KNOB**, wash and sanitize your hands and forearms and sanitize the item touched before returning to work.

**PRACTICE PHYSICAL DISTANCING**. If possible, stay **AT LEAST SIX FEET** away from other employees and **DO NOT SHARE** utensils (pens, keyboards, etc.) that have not been sanitized between uses.

When it is necessary to enter other areas, such as dropping off samples in Analytical, quickly drop off the samples in designated locations and leave promptly. Touch as few surfaces as possible, carry a sanitizer wipe with you if possible, and **PRACTICE PHYSICAL DISTANCING** if any other employees are present.

Clean and/or sanitize commonly/frequently touched surfaces every two to three hours. If you touched it or will touch it – clean and sanitize it!

*Note: These guidelines and requirements may include additional and/or enhanced prerequisites prior to entry to the CDR and its production areas; personal protective equipment (e.g. face masks, shields, gloves, gowns, etc.); communication, protocols, and scheduling to ensure social distancing; cleaning and sanitation procedures; training; etc. that **WILL BE IMPLEMENTED, MONITORED, AND ENFORCED** during pandemics.*

## BEST PRACTICES FOR PREVENTION:

Face coverings for all employees (especially if working around others).

Use of physical barriers. (Barriers can help and should be put up if possible).

Make sure workers aren't congregating elsewhere (break rooms, etc.). Recommend staggered breaks and lunch times.

Consistent training and education, personal hygiene (handwashing).

The CDC and other public health organizations highly recommend the use of cloth face coverings. (As of July 2020, many local public health departments mandated the wearing of face masks.) Face masks can be especially important in dairy plants, which are often loud environments. In a loud environment, people need to talk loudly to be heard, which can exacerbate or increase the spread of respiratory droplets.



Joey Jaeggi and Mary Wiklanski, CDR working in the pilot plant, practicing physical distancing and wearing face masks.

### Dairy Plant Case Study

During the June 3 webinar organized by Wisconsin Cheese Makers Association, Green County Public Health Director RoAnn Warden discussed a case study of a COVID-19 outbreak in a dairy plant in Green County (Wisconsin).

Warden said her department was notified that an employee had tested positive at a dairy plant. Warden and her staff reached out to the plant, which already knew of the positive test. The first step was to do a walk-through assessment and see if they had any recommendations as far as sanitation and best practices. The plant walk through resulted in the public health department suggesting employees wear face shields and implement social distancing on the manufacturing floor.

In addition, the Green County Public Health Department and the plant immediately implemented onsite testing in

the plant's conference room. They also had drive-through testing available in the plant's parking lot. Testing found 20 other employees (out of 167 tests) who also tested positive. Contact tracing was done with those employees who tested positive. Those employees with a positive test also self-isolated (10 days).



Melissa Houfe, CDR properly wearing a face mask and face shield.

An outside cleaning company came into the plant and cleaned and sanitized the entire plant.

The outbreak started in early May and by the middle of May, all employees (except one) were able to return to work. Warden said the plant acted quickly and was very cooperative and that is a big reason why the outbreak was contained. Warden said it was

also very important to have clear communication with employees and being able to quickly communicate in all languages (Spanish).

Warden also said the plant's human resources office was very helpful. Having information such as an employee roster as well as what line each worker was on.

### If an employee tests positive:

- ▶ Make sure to clean and disinfect area where worker worked or spent a lot of time. Wait 24 hours if possible (allow virus to deactivate). Follow EPA criteria to disinfect.
- ▶ Work with local public health agency. Local agency may reach out, contact tracing may be warranted or required, and notify employees of potential exposure but try to maintain confidentiality.
- ▶ Implement quarantine for workers who may have been exposed (isolation required for those who have it).

### Keep in Mind

Smukowski recommends that dairy plants consider the following things as we move forward.

- ▶ What is your communication strategy (both internal/external)?
- ▶ Be ready for change (fluid situation).
- ▶ People are saturated with information (try to be simple and clear).
- ▶ Emphasize face masks worn properly (facemasks are mandatory in some locations check with your local health department).
- ▶ Proper physical distancing (make sure you have systems in place to verify).
- ▶ What is expected of your employees?
- ▶ Have you done a risk assessment of communicable illnesses? If so, what are the next steps? 🌸

## MEETING CHANGING CONSUMER EATING TRENDS WITH DAIRY

Contributed By Sarah Minasian

According to Adobe Analytics' check on 80 of the top 100 U.S. online retailers, sales of pajamas rose 143% between March and April, and sales of pants and brassieres went down by 13% and 12% respectively. Since the onset of COVID-19, there has been a major shift in not just what we are wearing (or not), but consumer-eating trends have also changed. We're looking for comfort, we're looking for diversion, and we're looking to control something in our lives—like our health through cooking.

Aside from washing our hands, staying home and wearing masks when we venture out, people are proactively seeking ways to maintain a healthy immune system. We are fortunate to be in the dairy business representing a powerful food group that supports immune function.

### Dairy Supports Immune Function

Milk, cheese and yogurt all house essential nutrients. While all yogurts have live and active cultures, not all have probiotic strains that provide the health benefits supporting gut health. Activia is one brand that does contain the strains contributing toward the maintenance of a balanced gut microbiota. Fage and Siggi's are also brands that provide gut health strains of probiotics. Milk is a good source of Vitamins A and D, calcium and protein. Vitamin A supports the tissues of the gastrointestinal tract and respiratory systems, while Vitamin D protects against lung infections and also aids the respiratory system. Milk is also a good source of zinc, which assists in the immune system function and protein helps in one's ability to recover from illness. These attributes address many of the coronavirus symptoms head on.

### Increase in Breakfast Foods and Snacking

Knowing that people are staying in their pajamas longer, it should come as no surprise that breakfast consumption is up. With the days and hours within the days blurring, traditional larger meal times have evolved into lighter meals and snacking—a lot of snacking. So, what can CDR do to help? We can load you up with a few formulas that you can entertain yourself with knowing the result will be like premium fuel for your immune and digestive health tank, and overall physical and mental health.



Sassy cheddar bites.

### CDR Dairy Formulas That Meet Current Trends

First things first—pancakes! Pancakes primarily used to be eaten only in the morning, but we have a pancake formula that can be eaten as a lighter meal, and/or snack.

**The Savory Kimchee-se Pancake** has just the right amount of kick to snap you out of your isolation funk. Prepared with kimchee, Pepper Jack cheese, scallions and MPC80, a serving of three small 4-inch pancakes yields 12 grams of protein. Top them with a bit of jam and it won't matter what time you get up. A second more traditional formula, Pancakes with permeate and WPC80 yields 4 grams for two 4-inch pancakes. Not quite as exciting, so go ahead and get crazy smearing on the butter and maple syrup.

Don't be fooled by its name, **Breakfast Bites**, as this tasty formula can be eaten all day long. Made with MPC 80 and WPC 80, NFD, vegetables and Cheddar Cheese, two of these bites (127g) yield a whopping 21 grams of protein.

Few foods can be more comforting than soup so it's no wonder why soup consumption is up. Our **Yogurt Barley Soup** is a health rock star. Calling for almost 24% Greek yogurt, chicken broth, barley, spinach and MPC85, a cup serving yields 13 grams of protein. Additional enhanced protein soup formulas include Potato Leek, Cream of Tomato with Parmesan, Split Pea and Roasted Cauliflower with Curry.



Yogurt barley soup.

We also want to share our upscale Jell-O, as you'd call it—a **protein gelatin** “slurpable” snack prepared with the Filipino fruit, calamansi. Made with acidified whey protein isolate it imparts a lemon lime-orange flavor yielding 13 grams of protein per half cup serving. If calamansi isn't readily available it can be made with your flavor of choice.

These formulas can currently be found on the U.S. Dairy Export Council's Think USA Dairy website at [www.ThinkUSADairy.com](http://www.ThinkUSADairy.com). Select “Using Dairy” and then “Formulas & Recipes.” Or enter the recipe title or keywords into the website search bar.

We wish you hope, happiness, and healthy cooking with dairy! 🌸

## BABCOCK HALL BUILDING PROJECT MOVES FORWARD

Construction of the Babcock Hall building project continues to progress. The project includes a new, three-story addition to Babcock Hall for CDR and renovated spaces in the current building for dairy plant manufacturing and processing.

The structure of the three-story CDR addition is almost complete. The beams and pillars are in place and the concrete floors have been poured. The addition's walls and exterior brickwork is now being completed.

The steelwork for the penthouse structure, which tops the addition, has also been set with the HVAC equipment placed and the roof decking being laid. In the lower floors, stud walls are being framed as various overhead mechanicals are being roughed-in. Staff from CDR and University of Wisconsin-Madison Food Science Department have been working with the sanitary process contractor to finalize the design and order the processing equipment that will populate the new and renovated spaces.

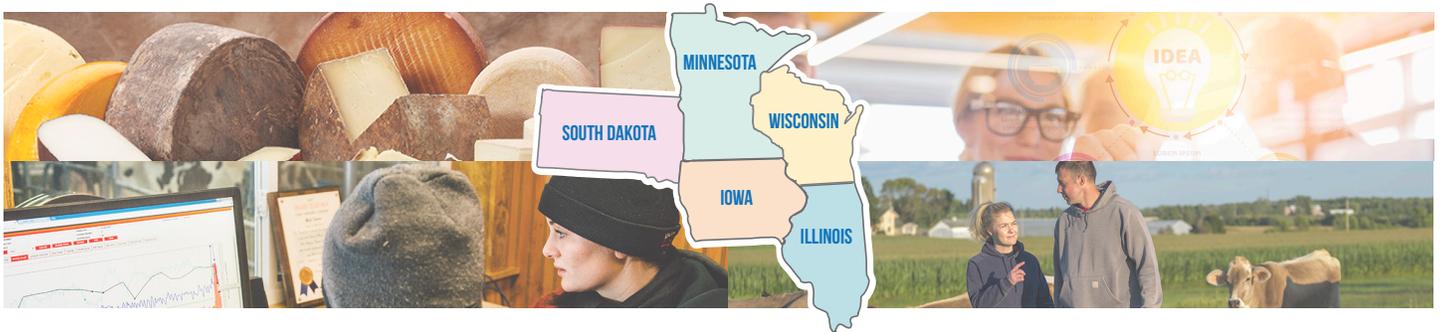
The building project will help expand CDR's capabilities. Below is a quick overview of some of the new equipment and features.

<b>CHEESE CAVES:</b>	The renovated dairy plant will include nine cheese caves (temperature-controlled rooms) that will improve CDR's ability to develop and research specialty cheeses (Alpine-style, blue mold, white mold, smear-ripened, and more).
<b>CHEESEMAKING TECHNOLOGIES:</b>	CDR will also have a range of different cheesemaking equipment and technologies available from state-of-the-art enclosed vats to smaller copper lined vats.
<b>DRYER</b>	CDR is also excited to be acquiring a new dryer that will allow CDR to expand its work on dairy powders.
<b>FERMENTATION EQUIPMENT:</b>	CDR will have new equipment and improved capabilities to develop and research cultured dairy products.
<b>BEVERAGE INNOVATION CENTER:</b>	The new addition will house the Beverage Innovation Center, which will include a pilot plant focused on developing aseptic dairy beverages.
<b>AUDITORIUM:</b>	The addition will also help improve CDR's focus and commitment to education with the construction of a new auditorium customized specifically for dairy industry training.

CDR thanks the dairy industry for its support of the Babcock Hall building project. Since the project began, companies, organizations and individuals within the dairy industry have donated more than \$18 million towards the building project. 🌟



## APPLICATIONS DUE AUGUST 14 FOR DAIRY BUSINESS INNOVATION ALLIANCE GRANT PROGRAM



**The Dairy Business Innovation Alliance (DBIA)** is accepting grant applications for its 2020 grant program until August 14. The grants are available to help Midwest dairy producers and processors diversify, modernize or develop new products.

DBIA's goal is to support program participants in achieving three goals: on-farm diversification, the development of value-added dairy products, and an increase in the exports of dairy products. Awards may be used for a variety of projects, including:

- ▶ Dairy farm diversification through value-added initiatives, such as development of dairy products or on-farm dairy business ventures.
- ▶ Modernization, specialization or expansion of farmsteads or processing facilities to support product development or improvement.
- ▶ Increasing sales of current products through improvement of product quality, packaging, marketing, etc.
- ▶ Dairy commodity innovation and value chain improvements.
- ▶ Ensuring and improving regulatory compliance and quality control to give businesses greater access to the food industry, e.g. to supply local stores and processors.

A grant review committee established by DBIA will review applications and make subsequent awards. Grants will be awarded for projects in increments up to \$20,000. Selected applicants will be notified September 4.

The grant application is available on the DBIA website: [www.turbo.cdr.wisc.edu/dairy-business-innovation-alliance](http://www.turbo.cdr.wisc.edu/dairy-business-innovation-alliance)

### Technical Assistance/Online Workshops

Given the current situation regarding COVID-19, DBIA will be converting its originally planned in-person workshops into online webinars. When regulations allow for in-person meetings, workshops will be held in locations throughout the five states of the alliance. In the meantime, webinars will provide information and

contacts on public sector resources that can assist in helping dairy farmers and processors expand into new areas of business.

DBIA held its first webinar on July 14 on the DBIA grant program. Additional webinars are being developed with a focus on providing technical assistance to viewers in such areas as: available resources to help develop their business idea, how to start a business, food safety, the regulatory environment, the product commercialization process, economic development financing tools, exporting dairy products, etc.



Please watch the DBIA website for additional updates regarding future webinars.

### DBIA Background

Coordinated as a partnership between the Center for Dairy Research (CDR) at the University of Wisconsin-Madison and Wisconsin Cheese Makers Association (WCMA), DBIA is available to help dairy-related businesses in the five states of Illinois, Iowa, Minnesota, South Dakota and Wisconsin.

DBIA is a result of the U.S. Department of Agriculture's Dairy Business Innovation Initiatives (DBII) in the 2018 Farm Bill. The initiatives support dairy businesses in the development, production, marketing and distribution of dairy products through direct technical assistance and grants to dairy businesses. In 2019, there was a national competition to select all-new innovation centers. In addition to Wisconsin's DBIA, other centers were selected at the University of Tennessee and the Vermont Agency of Agriculture, Food and Markets.

### For More Information About DBIA

[www.turbo.cdr.wisc.edu/dairy-business-innovation-alliance](http://www.turbo.cdr.wisc.edu/dairy-business-innovation-alliance) ➔

## MEET KAREN NIELSEN: DBIA PROGRAM COORDINATOR

Karen Nielsen is Program Coordinator for the Dairy Business Innovation Alliance (DBIA). Karen has 25 years of experience building and managing university and dairy industry collaborations. She was Director of the Babcock Institute for International Dairy Research and Development and was responsible for organizing over 180 courses for more than 8,000 participants from 84 countries. Karen also works as the Outreach Program Manager for the Nestlé China Dairy Farming Institute (DFI) Curriculum Development project in the University of Wisconsin-Madison Department of Dairy Science, which aims to lift China's emerging dairy industry. Raised on a farm and in small towns in rural Wisconsin, she has a Bachelor's degree from St. Olaf College and a Master's Degree in Chinese language, history and culture from the University of Minnesota. She believes that her work at CDR/DBIA can help rebuild and revitalize the dairy industry in the Upper Midwest by encouraging and supporting strong, resilient, profitable, innovative dairy farms and processors of all sizes.



**Contact:** Karen Nielsen, DBIA Program Coordinator | [knielsen@cdr.wisc.edu](mailto:knielsen@cdr.wisc.edu) | 608-265-1491 🌻

## SMUKOWSKI HONORED WITH LIFETIME ACHIEVEMENT AWARD

The American Cheese Society (ACS) announced that CDR's Marianne Smukowski has been honored with the ACS Lifetime Achievement Award. The award was created in 2006 by the ACS Board of Directors to honor an individual whose professional accomplishments have made a significant and lasting impact in the American cheese industry, and whose life and character have earned the respect and admiration of their professional colleagues.



“Described by her peers as a selfless and passionate leader, there is few more fitting of the award criteria than Marianne,” the award announcement stated. “For more than 30 years she has made many valuable food safety, quality, and regulatory contributions to our industry.”

Marianne has served for many years as an ACS competition judge, as the ACS liaison to the FDA, as a member of several committees, and on the Board of Directors. In 2019 she was elected as ACS board President.

“I was quite surprised to receive this award,” Smukowski said. “I am deeply honored to be recognized by my peers.” 🌻

## GROSSEN RECEIVES MULTIPLE HONORS FROM UW

Gary Grossen, CDR Research Cheesemaker, was one of only 10 University of Wisconsin-Madison employees who received a 2020 University Staff Recognition Award. In addition, earlier this spring, the College of Agriculture and Life Sciences also honored Grossen with its University Staff Recognition Award. Congratulations Gary! 🌻



## CDR WELCOMES RAFIK TADJER

Rafik Tadjer has joined CDR and is serving as the center's IT Systems Administrator. Rafik has professional experience in many fields, including computer science, network administration, power system control, HVAC, and business management administration. Rafik has more than 10 years of IT administration experience and has worked as an Engineering Manager where he gained experience in Lean Manufacturing, Supply Chain, and Operations Management. Fluent in English, French and Arabic, he likes spending times with his family outdoors and playing soccer. 🌻



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## CDR SHORT COURSES MOVE ONLINE

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CDR's team of experts have evolved our short courses to deliver the same science-based learning and training resources to meet your needs through online instruction. Below is a listing of our upcoming online learning opportunities. If interested in a course, please register early to allow CDR staff time to prepare and mail class materials. For more information or to register, visit [www.cdr.wisc.edu/shortcourses](http://www.cdr.wisc.edu/shortcourses)

Certificate in Dairy Processing – September 2

Food Safety Workshop (HACCP) – September 3

Buttermakers Short Course Online – September 9-10

Master Artisan Short Course Series, Swiss Cheese – September 28

Dairy Ingredient Manufacturing – October 20-21 (DATES MAY CHANGE)

Dairy Protein Beverage Applications Online Course – October 27-29

Cheese Tech Short Course – Dates TBA



### DAIRY PIPELINE

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