

THE JACKRABBIT DAIRY REVIEW

Winter 2004-2005

Dairy Science Department, DM 109, South Dakota State University, Brookings, SD 57007

Dairy Science Department Faculty

Vikram Mistry, *Professor & Head*
Sameh Awad, *Visiting Professor*
Robert Baer, *Professor*
Howard Bonnemenn, *Instructor/Dairy Plant
Manager*
Alvaro Garcia, *Extension Dairy
Specialist/Associate Professor*
Ashraf Hassan, *Assistant Professor*
David Henning, *Alfred Chair in Cheese
Chemistry & Technology/Associate Professor*
Arnold Hippen, *Associate Professor*
Kenneth Kalscheur, *Assistant Professor*
Rajinder Nauth, *Adjunct Professor*
John Parsons, *Professor & Head Emeritus*
Darrel Rennich, *Manager, Dairy Research &
Training Facility/Lecturer*
David Schingoethe, *Distinguished Professor*

Staff

Arnold Appelt, *Chemist Supervisor*
Tim Bauer, *Ag Research Technician/Maintenance*
Andrew Boerema, *Tech Fellow*
Valerie Denison, *Secretary*
Kevin Gross, *Assistant Manager, Dairy Research &
Training Facility*
Margaret Jensen, *Word Processor*
Gary Kirkham, *Ag Foreperson-Lead Feed*
Kim Ludens, *Secretary*
Sachinkumar Magdum, *Dairy Plant Superintendent*
Jayne Raabe, *Senior Secretary*
Jacob Walz, *Ag Foreperson/Transition/Fresh &
Sick cows/Calf care*

Graduate Students

Dairy Production	Milton Thomas
Malek Abdelqader	
Joby Cyriac	Dairy Manufacturing
Greg Golombeski	Panna Agrawal
Daryl Kleinschmit	Yachai Amornkul
Jill Ladd	Sumita Chanda
Peter Linke	Nirav Pandya
Gaolebale Mpapho	Mandeep Patel
Benjamin Pamp	Himanshu Somni
Arun Sasikala	Prem Thakur

MESSAGE FROM THE DEPARTMENT HEAD

Greetings from Brookings! It is a pleasure to report on the outstanding accomplishments of 2004 of Dairy Science faculty, students, staff and alumni. With 23 new students enrolled in Dairy Science in fall '04, we now have 66 undergraduate students; 27 Manufacturing, 34 Production and 5 Manufacturing and Production students.

We continue to receive excellent support from industry, alumni and friends through scholarships for our students; we awarded \$48,600 in Dairy Science scholarships in 2004. Fifteen undergraduate and 3 graduate students completed their degrees in Dairy Science in 2004. Seven companies visited the department in 2004 to interview students and numerous other employment and internship opportunities have been realized through additional contacts. Exciting developments have occurred in the dairy plant fund raising project and we currently have approximately one million dollars in commitments.

Our graduate programs continue to be vibrant, with 17 students currently enrolled in M.S. or Ph.D programs. Much of their support and that of our research programs comes through funding secured by our faculty. This year our faculty were awarded at least 12 different external sources of funds to support research and other programs. This is in addition to funds received through the university. External funds are very competitive and awards of such funds to our faculty are testimony to their recognition on regional, national and international levels. Faculty have used these external funds to support research programs, judging activities, k-12 programs and travel. Numerous publications as peer-reviewed scientific papers, presentations, book chapters and extension publications have resulted from these activities.

"Globalization" is an important aspect of the dairy industry today. Students must be aware of the industry on a much broader basis than they did in the past. The Dairy Science department is an active participant in the globalization efforts of the university and industry. Walking in the hallways of the department one may easily hear approximately 8 languages from personnel representing 7 countries. During the year faculty and students traveled to at least 8 states in the US and 4 countries on professional assignments. Extension publications in Spanish were introduced as an expansion of the already active dairy extension program.

Thank you for your continued support. Best wishes for 2005 and keep in touch.

Vikram Mistry

DAIRY PLANT RENOVATION UPDATE

The dairy plant renovation project is progressing and has taken on a new phase with two new developments: Earlier in the year a group of alumni agreed to solicit support from alumni through a letter that was sent out in November and by personal contact. This dedication and support is greatly appreciated. Most alumni should have received this letter. This has already generated support through contributions. Your response through personal support or through your employer will truly be appreciated. During summer 2004 the restructuring of the SDSU Foundation fundraising efforts led to the appointment of Craig Russow as the Development Officer for the College of Agriculture and Biological Sciences. The College has identified the dairy plant project as its top priority. Craig and the SDSU Foundation are now closely working with the department to move the project forward. Please contact Dr. Vikram Mistry for details.

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NEW FACULTY AND STAFF

Kevin Gross joined the Dairy Science department in April and is currently Assistant Manager at the dairy Research and Training Facility. He supervises the scheduling of employees, supervises afternoon milking and oversees research projects. Prior to joining SDSU, Kevin was employed at Christensen Farms.



Gross



Awad



Boerema

Dr. Sameh Awad, an Associate Professor of Dairy Science and Technology at Alexandria University, Egypt, was a visiting scientist in the Dairy Science Department at SDSU for 9 months

beginning February 2004. Dr. Awad works with Dr. Ashraf Hassan on a MN-SD Dairy Foods Research Center project titled: Selection of appropriate nonropy exopolysaccharide-producing lactic cultures for making low fat Cheddar cheese with improved physical properties. In November Dr. Awad returned to Egypt and will resume his duties at SDSU in January 2005.

Andrew Boerema is a temporary Tech Fellow in the department. He is assigned to help department faculty develop computer-related technologies to assist with teaching and research.

NEW GRADUATE STUDENTS

Malek Abdelqader (Irbid, Jordan), Ph.D., Dairy Production. Advisor, Dr. Arnold Hippen

Panna Agrawal (Hapur, India), M.S., Dairy Manufacturing. Advisor, Dr. Ashraf Hassan

Yachai Amornkul (Bangkok, Thailand), Ph.D., Dairy Manufacturing. Advisor, Dr. Dave Henning

Peter Linke (Mitchell, SD), M.S., Dairy Production. Advisor, Dr. Arnold Hippen

Benjamin Pamp (Garvin, MN), Ph.D., Dairy Production. Advisor, Dr. Kenneth Kalscheur

Arun Sasikala (Thrissur, India), M.S., Dairy Production. Advisor, Dr. Dave Schingoethe

Himanshu Somni (Ahmedabad, India), M.S., Dairy Manufacturing. Advisor, Dr. Vikram Mistry

Milton Thomas (Thrissur, India), M. S. Dairy Production. Advisor, Dr. Arnold Hippen

The department hosted two interns in the summer for research activities: **Jose Baez** (Equador) and **Perrine Exbrayot** (France). Both students worked with **Dr. Kalscheur**.

NEW UNDERGRADUATE STUDENTS

Transfer

Angie Bengtson (Kandiyohi, MN), Dairy Production

Sally Loeschke (Milbank), Dairy Production

Jimmy Delaney (Pipestone, MN), Dairy Manufacturing

Jonah King (Volga), Dairy Manufacturing

Rebecca Wirt (Lewiston, MN), Dairy Manufacturing

Freshman

Peter Beck (Princeton, MN), Dairy Production

Tori Boomgaarden (Pipestone, MN), Dairy Manufacturing

Richard DeRouchey (Mitchell), Dairy Manuf/Prod

Melissa Euerle (Litchfield, MN), Dairy Production

Derek Griesse (Harrisburg), Dairy Manufacturing

Roy Hauschildt (Lake Norden), Dairy Manufacturing

Natalie Herbert (Rock Rapids, IA), Dairy Production

Laura Kennedy (Beresford), Dairy Manufacturing

Gerben Landman (White), Dairy Production

Sarah Morrison (Florence), Dairy Manufacturing

Brittany Nussbaum (Garretson), Dairy Production

Stephen Plucker (Chancellor), Dairy Manufacturing

Heather Rollefson (Sibley, IA), Dairy Production

Garrett Schmidt (Melrose, WI), Dairy Production

Erin Smith (New Ulm, MN), Dairy Production

David Stenberg (Rapid City), Dairy Manufacturing

Wendy Weber (Sioux Falls), Dairy Manufacturing

Alex Welk (Ortley), Dairy Production

2004 GRADUATES

Congratulations to the following 2004 Dairy Science graduates. We wish them well in their careers.

B.S. Manufacturing

Jacob Anderson, Production Supervisor, Davisco Foods Intl., Lake Norden, SD

Jake Hammerly, QA trainee, Roberts Dairy, Omaha, NE

Beau Hornig, Management Trainee, Davisco Foods Intl., Lake Norden, SD

Cheryl Kampmann, Management Trainee, Davisco Foods Intl., Jerome, ID

Dallas Vaughn, Food Technologist, Wells Dairy, Le Mars, IA

B.S. Production

Patrick Conlan, Home farm, Cresco, IA

Kirsten Linke, Continue school to complete Ag Education.

Pete Linke, Graduate School, SDSU

Mark Qual, Family farm, Lisbon, ND

Shannon Sellner, December graduate.

Kristi Stalberger, December graduate.

Dawn Wobig, Herd Computer Technologist, Horizon Organic Dairy, Paul, ID

Darin Zoellner, Al Shar Holsteins, Groton, SD

2004 GRADUATES (continued)

B.S. Manufacturing/Production

Anna Alexander, Sales Associate, Wal-Mart, Brookings, SD
Karissa Nielsen, QA Manager, Rochester Cheese, Dalbo, MN

M.S.

Seema Das, Dairy Manufacturing. Microbiologist, Animal Disease Research and Diagnostic Lab, SDSU

Sheri Kahnke, Dairy Manufacturing. Quality Assurance, Davisco Foods Intl., Lake Norden, SD

Ph.D.

Jeff DeFrain, Ph.D. Dairy Production. Dairy feeds consultant, Hubbard Feeds, Wahpeton, ND

JUDGING ACTIVITIES

Dairy Cattle

At the Third Annual North American Intercollegiate Dairy Challenge in Altoona, PA the SDSU team consisting of **Derek Shumaker, Shannon Sellner, Pat Conlan, and Anna Alexander** and coached by **Darrel Rennich** and **Arnold Hippen** placed in the Gold category. Sponsors of the SDSU team were: West Central Soy, Dairy Net 2000, Monsanto Dairy Business, Alltech Inc., Land O'Lakes Feed, and the SDSU Dairy Club.

The SDSU team consisting of **Ted Norling, Justin Morehouse, Brad Korver, Ashley Vonk** and coached by **Darrel Rennich** competed at the Accelerated Dairy Cattle Judging Contest in Viroqua, WI on September 19th, 2004. Specific breed placements were: 10th in Ayrshire, 14th in Guernsey, 19th in Holstein, 9th in Jersey, and 21st in Milking Shorthorns. They placed 17th in Reasons and 19th overall.

Ted Norling, Justin Morehouse, and Shannon Sellner competed at the National Collegiate Dairy Cattle Judging Contest in Madison, WI on October 4th, 2004. The team placed 11th in Ayrshire, 3rd in Brown Swiss, 24th in Guernsey, 17th in Holstein, 23rd in Jersey, 20th in Milking Shorthorn, 20th in Red and White,



16th in Reasons and 21st Overall. Ted Norling placed 3rd for Ayrshire, 14th for Brown Swiss and 6th for Holstein. Justin Morehouse was 15th in Brown Swiss. The team was 16th in the Linear Contest and Justin Morehouse placed 7th as an individual. **Ted Norling** placed 25th overall in the contest.

Dairy Products

The Dairy Products Judging Team coached by **Dr. Bob Baer** and including **Amber Sperlich, Jean Hughes, Brandon Sahr, and Mandeep Patel** (graduate student) placed sixth in the Midwest Regional Contest in Glenview, IL on October 25, 2004. The team placed 2nd in Cottage cheese and 4th in butter. Jean Hughes placed 1st in cottage cheese and 2nd in butter. Brandon Sahr was 4th in yogurt. In the graduate contest, Mandeep Patel

was 1st in ice cream and cottage cheese and 3rd in All Products. At the National Contest in Lakeland, FL on November 5 the team placed 4th out of 18 teams. The team was 2nd in Cheddar cheese and 3rd in milk. Amber placed 4th, Jean was 10th, and Brandon was 19th in All Products. Brandon placed 2nd overall in milk. In the graduate contest Mandeep Patel was 3rd in yogurt, butter, Cottage cheese, and All Products.

PROFESSIONAL ACTIVITIES OF FACULTY

Publications

Faculty and students together presented over 50 papers including 11 refereed papers in scientific journals, 19 abstracts, 9 presentations, 2 book chapters, 6 extension publications and 3 thesis or dissertations and several extension presentations. The department also published for the first time extension publications in Spanish through the efforts of **Dr. Garcia**. All publications are listed at <http://dairysci.sdstate.edu> under Department Information>Publications.

Activities

Howard Bonnemann served as secretary/treasurer of the South Dakota Dairy Association. He conducted several dairy products judging clinics for South Dakota high schools.

Dr. Rajiv Dave traveled to Korea for a 4-month exchange professorship in Dairy Science at the Chungnam National University in Daejeon, Korea. He was also Secretary of the Dairy Foods Division and member of the Dairy Foods Division Council of the American Dairy Science Association (ADSA).

Dr. Alvaro Garcia took part in a two-week assignment working to improve milk quality and supply in Honduras, the second largest milk-producing country in Central America. Garcia went there at the invitation of Winrock International in partnership with USAID and Land O'Lakes. Dr. Garcia was vice-chair at the National Calf and Heifer growing conference in Roanoke, VA. He was also invited speaker at the same conference.

Dr. Ashraf Hassan was invited to the 9th Egyptian Conference of Dairy Science and Technology to present a lecture entitled Understanding Functions of Exopolysaccharides in Dairy Products.

Dr. Dave Henning completed his term as a member of Board of Directors of the American Dairy Science Association and is member of the Board of ADSA Foundation. He served as a judge for student affiliate division quiz bowl, and a judge for student affiliate outstanding student and advisor. He was member of the ADSA Richard M. Hoyt award and Fellow of ADSA selection committees. He is the executive secretary for the North Central Cheese Industries Association.

Continued on page 4

PROFESSIONAL ACTIVITIES OF FACULTY (continued)

Dr. Arnold Hippen was chair of ruminant nutrition and forages committee (Midwest ADSA) and chair of Institutional Animal Care and Use Committee of SDSU.

Dr. Ken Kalscheur was a member of undergraduate student competition paper committee (Midwest ADSA).

Dr. Vikram Mistry was a member of the International relations committee of ADSA. He was an invited speaker at the 2004 Dairy Symposium (formerly Marshall Symposium) in Spring Green, WI. He is the US editor for the French Journal of Dairy Science, *Le Lait* and is on the advisory board of NCCIA. He also was a member of the scientific committee for the International Symposium in Spray Drying Symposium held in Ireland.

Darrel Rennich served as a board member for the Central Plains Dairy Expo and the Vice President of SD Holstein Association.

Dr. Dave Schingoethe was Editor of Journal of Dairy Science (ADSA) and completed his term as president of the Federation of Animal Science Societies. He was an invited speaker at the Eastern Nutrition Conference in Ottawa, Canada, the DGTC Symposium in Louisville, KY, and three area workshops in Iowa, all on the subject of distillers grains in dairy cattle nutrition.

Dr. Rajiv Dave resigned his position as Associate Professor in July to accept an industry position. Dr. Dave joined the department in 1999 and had established an active research and teaching program. His position in Dairy Microbiology has been advertised and we hope to introduce a new faculty member in the near future.

Dr. Patrick Fox, Professor Emeritus in Dairy Chemistry at University College Cork, Ireland was in Brookings for a week during August to present a short course in Dairy Chemistry. The workshop was well attended by faculty, students and industry personnel. Dr. Fox is an internationally recognized expert in Dairy Science and has written numerous scientific publications and edited several text books.

Promotions and Awards

Dr. Rajiv Dave received the 2004 SDSU Chapter of Sigma Xi research award in recognition of his work on Mozzarella cheese over the past 5 years.



Garica

Dr. Alvaro Garcia was promoted to Associate Professor effective July 1. Dr. Garcia joined the Dairy Science Department in January 2001 and has made outstanding contributions to the state dairy industry through his position as the Dairy Extension Specialist. Through his international experience Dr. Garcia brings a global perspective to the dairy extension program in the state and he has also assisted in the recruitment of dairies to South Dakota. He routinely takes leadership in the development of programs with producers, faculty and county educators. He has also taken the lead in the publication of the Dairy Matters Newsletter, which is jointly published by SDSU, the South Dakota Department of Agriculture, and the Midwest Dairy Institute. He recently conducted the first workshop for dairy producers in Spanish. He is an active collaborator in departmental research. Dr. Garcia is the chair-elect for the Professional Dairy Heifer Growers Association. Dr. Alvaro Garcia was also presented a Certificate of Merit at the Annual Extension Conference in Brookings for his outstanding contributions in Dairy Extension.



Hippen

Dr. Arnold Hippen was granted tenure in Dairy Science effective 1st July 2004. Dr. Hippen has been a member of the Dairy Science faculty since 1998 when he was appointed as the David H. Henry Sustained Professor in Dairy Science. Through this professorship Dr. Hippen worked with Land O'Lakes and its customers in the area of dairy cattle nutrition. Dr. Hippen has established an outstanding program in dairy cattle nutrition research and many of his projects are in collaboration with industry. Dr. Hippen also teaches several courses in Dairy Science and is an advisor to graduate and undergraduate students. He is a co-coach for the SDSU Dairy Challenge team. Dr. Hippen has been an active mentor to undergraduate students for research. One of his students, Charity Skogrand, received the 2003 Undergraduate Griffith Research Award and another student, Shannon Sellner has received the 2004 Undergraduate Griffith Research Award and the Rushmore Undergraduate Research Assistantship of EPSCoR.

Dr. Vikram Mistry was the recipient of two awards at the annual meeting of the American Dairy Science Association in St. Louis, MO. He received the Kraft Foods Teaching award for outstanding contributions to teaching Dairy Science over the past 18 years. He also received the International Dairy Foods Association award for his research in the area of dairy processing, particularly cheese technology, and membrane processing applications.



Raabe

Jayne Raabe, was the Career service employee of the month for February. She has provided outstanding service to the Dairy Science department since 1987. Her loyalty to her position, her colleagues, and students and to SDSU has been clearly evident in her performance for 17 years.

Dr. Dave Schingoethe was the recipient of the 2004 Faculty Griffith Research Award of the Agricultural Experiment Station at SDSU. The award brings with it a one-time cash stipend of \$2,500 and \$12,000 in research funds for each of two years. Dr. Schingoethe will conduct research in dairy cattle nutrition.

New Funds for Supporting Research and Other Programs

Dr. Bob Baer: Improving the nutritional quality and texture of frozen desserts. \$20,000. *Wells Dairy, Inc.* (Aug. 04–Feb. 06); \$2500 from the *International Association of Food Industry Suppliers* to support the products judging team. (2004).

Dr. Rajiv Dave: Processing technologies to improve the solubility and mouth feel of dairy minerals in liquid products at neutral pH. 2004 budget - \$33,000. *MN-SD Dairy Foods Research Center* (Jan. 04–Dec. 04).

Dr. Ashraf Hassan: Selection of the appropriate nonropy exopolysaccharide-producing lactic cultures for making low fat Cheddar cheese with improved physical properties. 2004 budget - \$21,545. *MN-SD Dairy Foods Research Center* (Jan. 04–Dec. 04); Expanding the use of whey in food and increase in food safety. \$30,000. USDA-FAS, *US-Egypt joint board on scientific and technological cooperation.* (Sept. 04–Aug. 06); Isolation and purification of exopolysaccharides from lactic cultures. \$5,000. *Royal Veterinary and Agricultural University, Denmark.* (Sept. 04–Dec. 04); \$5000. *SDSU Research Support Fund.* (Apr. 04 – Apr. 05).

Continued on page 5

New Funds *(continued)*

Dr. Ken Kalscheur: Improving intake and performance of dairy cows fed wet distillers grains preserved with CakeGuard. \$12,111. *Alltech.* (July 04–Dec. 05); Replacement of forage in dairy cow diets with distillers grain. \$27,750. *South Dakota Corn Utilization Council.* (July 04–July 05).

Dr. Vikram Mistry: Process cheese from membrane concentrated/fractionated milk. 2004 budget – \$24,720. *MN-SD Dairy Foods Research Center* (Jan. 04–Dec. 05); \$4000 from *North Central Cheese Industries Association* and the *College of Agriculture and Biological Sciences* to support the summer high school internship program. (2004).

Darrel Rennich: \$2000 from *various sources* to support the cattle judging team. (2004).

Dr. Dave Schingoethe: Applications of distillers grain in dairy cattle nutrition. \$12,000. *Griffith Award, SDSU.* (2004–2006).

Other On-going or Completed Research Projects – 2004

Dr. Rajiv Dave: Use of acid whey in fermented dairy products. \$65,000, *MN-SD Dairy Foods Research Center*; Understanding the role of starter cultures in Mozzarella cheese functionality. \$77,000. *MN-SD Dairy Foods Research Center.*

Joan Hegerfeld (Family Youth Development/4-H), **Dr. David Henning, Padmanaban Krishnan** (Nutrition, Food Science and Hospitality), and **Rhoda Burrows** (Horticulture, Forestry, Landscape and Parks): Study of the reduction of foodborne risks associated with direct marketed foods in South Dakota. \$500,000. *CSREES/USDA.* (Nov. 03–Nov. 06).

Dr. Arnold Hippen: Periparturient supplementation of dairy cow diets with propionate and/or fat. \$20,000. *Pestell.* (April 03–April 06); Wet corn distiller’s grains as an alternative to dried distillers grains in dairy cow diets. \$30,000. *SD Corn Utilization Council.* (July 02–July

03); Glycerol as a feed supplement to dairy cows for prevention of fatty liver and ketosis. \$12,000. *West Central Soy.* (02–04).

Drs. Arnold Hippen and Ken Kalscheur: Study of the feeding of Amaize as a preventative for digestive and metabolic disturbances during transition period in dairy cattle. \$15,000. *Alltech.* (Sept. 03–Sept. 04).

Drs. Arnold Hippen, Ken Kalscheur, and Dave Schingoethe: Evaluation of slow release urea fed in combination with highly fermented sugars in diets of lactating dairy cattle. \$35,354. *Mid-West Ag Enterprises.* (Dec. 03–Dec. 04); Study new uses of distillers grain products in dairy cattle feeding. \$167,000. *USDA-ARS.* (April 02–April 06).

Dr. Arnold Hippen and Darrel Rennich: Evaluation of the impact of rubber flooring on cow comfort. Rubber flooring plus \$17,249. *Animat Inc. and Agricultural Experiment Station.* (July 03–July 04).

Dr. Ken Kalscheur: Nitrogen and phosphorus excretion from dairy heifers fed diets increasing in concentrations of corn distillers grains. \$4,910. *SDSU Research Support Fund.* (Apr. 03–Apr. 04).

Drs. Ken Kalscheur, Arnold Hippen, and Dave Schingoethe: Study of the improvements of milk fat composition by feeding oilseeds to dairy cows. \$28,400. *South Dakota Oilseeds Council.* (Jan. 03 – Sept. 04).

Dr. Vikram Mistry. Development of a new buttermilk ingredient. \$140,082. *Kraft Foods.* (Dec. 02–Dec. 04); Purchase of a microfiltration unit. \$63,136. *USDA-NRI and Agricultural Experiment Station.* (Sept. 03–Sept. 04).

Dr. Dave Schingoethe: Evaluation of improved dried distillers grains with solubles for dairy cattle. \$40,683. *Dakota Gold Research Foundation.* (Dec. 03–Dec. 07); Evaluation of feeding yeast extract to lactating cows during warm weather. \$30,000. *Diamond V Mills, Inc.* (Apr. 02–Feb. 06).

DAIRY CLUB

The officers this year for the dairy club are: **Annie Milbrandt**, President; **Shannon Sellner**, Vice President; **Ashley Vonk**, Secretary; **Molly Alberts**, Treasurer; **Brandon Sahr** and **Derek Shumaker**, Historians; **Justin Morehouse** and **Brian Walters**, Activities Coordinators. Advisors are Howard Bonnemann, Dr. David Henning, Dr. Arnold Hippen and Darrel Rennich. Club members attended the ADSA Midwest student affiliate conference in Columbus, OH in February. They have been selected to host the 2005 student affiliate confer-



ence. The conference will be held in February and expects to draw 500 students to Brookings. The club helped conduct a Dairy Camp for k-12 students in May and attended the World

Dairy Expo in Madison, WI in October. Club members showed cattle from the SDSU Dairy Research and Training Facility at the SD State Fair with impressive results: Four top awards for Brown Swiss, including Junior Champion and Senior Champion. Club members helped host the 2004 All Breeds Sale on the SDSU campus and sold Christmas cheese boxes in fall.

DAIRY RESEARCH AND TRAINING FACILITY UPDATE

The DRTF has approximately 150 certified and registered milking cows and a total of 300 animals. This includes approximately 50 Brown Swiss. One of our Brown Swiss was Junior Champion at the 2004 SD State Fair and the Grand Champion Cow. The Holstein Association USA recognized three of our Holsteins among the top 10,000 cows in the US as well as several others for top placing in fat, protein and milk production. The rolling herd average reached record

production of 25,000 pounds this year. We continue to look at effective manure management systems including manure separation systems and anaerobic digestion for the future as a part of a major Agricultural Experiment Station effort towards alternative energy sources and nutrient management. New curtains were installed at the barn in the fall. Personnel changes at the facility include the appointment of an Assistant Manager and a student manager.

THE JACKRABBIT DAIRY REVIEW

SCHOLARSHIPS

Thanks to the generosity of many alumni and industry our students continue to be supported through scholarships. This support is critical to the program and for the future of the dairy industry. At the spring 2004 banquet, \$48,600 was awarded in scholarships and awards. The 2004 scholarships were as follows:

Donor	Amount
John Anderson Memorial (2 @ \$500 each)	\$1000
Associated Milk Producers, Inc.	\$1000
Ross Baker Memorial	\$700
Emery Bartle Memorial	\$2500
Dairy Club (2 @ \$250 each)	\$500
Dairy Farmers of America	\$400
Danisco	\$1000
Davisco Foods Int'l, Inc.	\$750
Dean Foods - Land O'Lakes	\$1000
Derdall	\$500
Gilbert T. & Olga Gilbertson Memorial	\$700
Clyde Helsper Memorial	\$400
Land O'Lakes-Region 65	\$500
Marigold Foods	\$1500
James Marvel Memorial	\$600
Kirk Mears Memorial	\$600
North Central Cheese Industries Association (2 @ \$1500, 1 @ \$1200)	\$4200
Nordica Licensing Inc.	\$500
H. C. Olson	\$800
T. M. Olson	\$1000
Rhodia, Inc.	\$500
Alfred Hermann Rishoi (2 @ \$1000 each)	\$2000
Ralph Rogers Memorial	\$400
Saputo Cheese	\$1000
Joe E. Schuch (2 @ \$1000 each)	\$2000
Shirley Seas Memorial	\$700

Donor	Amount
Sinton Dairy Foods	\$500
SD State Dairy Association (2 @ \$1000 each)	\$2000
Valley Queen Cheese Factory	\$2500
Joseph Van Treeck	\$1000
Wells Family Foundation	\$1000

Awards

D. F. Breazeale Memorial	\$375
Dairy Judging Manufacturing	\$150
Dairy Judging Production	\$150
Forbes Leadership	\$300
Graber-Ford	\$125
Alfred Tobkin Memorial (4 @ \$150 each)	\$600
Howard Voelker Memorial (4 @ \$150 each)	\$600
Dairy Challenge Award (4 @ \$100 each)	\$400

Incoming Students Scholarships

Dairy Science Faculty (1 @ \$800, 1 @ \$600)	\$1400
William & Marge Kallemeyn & Sons (2 @ \$1000 each)	\$2000
Midwest Dairy Assn/SD Division (3 @ \$750)	\$2250
SD Dairy Fieldmen's Association (5 @ \$500)	\$2500
Clyde G. Helsper Dairy Fieldmen's	\$500
SDSU Alumni/Valley Queen Cheese	
Employees Freshman (2 @ \$1000 each)	\$2000
Valley Queen Cheese Factory	\$1000
Royal and Helen Donor in Dairy Prod.	\$600

In addition to these scholarships, Dairy Science students won four of the 20 scholarships awarded by the National Dairy Promotion and Research Board in nation-wide competition. **Rindy Harkness, Annie Milbrandt, Amber Sperlich, and Ryan Tollefsrud**, each received \$1500 scholarships.

DAIRY PLANT UPDATE



While the dairy plant eagerly waits for the completion of the renovation project, it continues to move ahead in the existing facility. The most prominent is the new contractual agreement with the South Dakota Made Stores of Bristol to sell ice cream in South Dakota. Under the agreement we are supplying approximately 43,000 gallons of ice cream in 1/2 gallon packages to the SD-Made Store for distribution. Five commercial

organizations used our facilities for small-scale trials in various processing activities. Two new pieces of equipment were acquired; a much needed cream separator under the plant renovation project and a 1.7 m² ceramic microfiltration unit through a USDA equipment grant. This unit was installed in the summer and is being used for research and teaching. The plant continued to be a key component of the Dairy Manufacturing Field Experience class. Wendell Alberts, State Inspector, conducted a plant inspection session with this class. This session included a hands-on inspection tour of a commercial plant.

YEARS OF SERVICE

Gary Kirkham, Ag Foreperson-Lead Feed at the Dairy Research and Training Facility was recognized for 20 years of service.

STUDENT ACCOMPLISHMENTS

2004 was an excellent year for Dairy Science students with an outstanding record of accomplishments at the campus, regional and national levels.

Richard DeRouchev, Freshman Dairy Manufacturing and

Production major placed 9th overall in the dairy foods judging contest at the National FFA Convention in Louisville, KY. He was a member of the team from his former high school (Mitchell) that placed 6th in the contest.

STUDENT ACCOMPLISHMENTS *(continued)*

Dan Fritsche was selected as the 2004 outstanding youth finalist by the Guernsey breeders.

Daryl Kleinschmit received the 2004-2005 John Brandt Memorial Foundation Scholarship. This scholarship of \$25,000 is awarded annually on a competitive basis nationally to students pursuing advanced studies in Dairy Science. Daryl is working towards his Ph.D. in Dairy Production and is doing research on distillers grain applications in dairy cattle nutrition.

Jenna Mueller, sophomore Dairy Manufacturing and Production major was awarded the American FFA degree at the National FFA Convention in Louisville, KY in recognition of her many years of active participation and leadership in FFA. This is the highest honor that a FFA member can receive.

Karissa Nielsen was recognized as an outstanding student by the honorary society, Gamma Sigma Delta. She completed her undergraduate research work under the Joseph F. Nelson undergraduate mentor program and Griffith Award. She presented her work at the American

Dairy Science Association annual meeting in St. Louis, MO.

Garrett Schmidt, freshman Dairy Production student from Melrose, WI received a gold emblem for dairy cattle evaluation at the 75th National FFA Convention in Louisville, KY. Garrett's team from Wisconsin also received a gold emblem and placed 7th overall in the contest.

Shannon Sellner received the Griffith Undergraduate research award of the SDSU College of Agriculture and Biological Sciences. The award consists of \$500 cash and \$2000 research funds. Dr. Arnold Hippen is Shannon's mentor. She is evaluating and testing efficacy of a novel feed product for prevention of ketosis, a metabolic/energetic disorder affecting as many as 30% of dairy cows. Shannon was also selected to receive the EPSCoR Undergraduate Research Assistantship for \$3000 for evaluating degree of ruminal degradation of soybean meals processed with inclusion, or not, of specific soy coproducts.

Ashley Vonk was Member-at-Large, midwest branch of student affiliate division of ADSA.

OUTREACH

K-12 Students

Dairy Science faculty designed and conducted several programs this year for educating k-12 students about opportunities in Dairy Science as a college major and permanent career:

Sioux Falls Ag Day

The Dairy Science Department was represented by Dr. Bob Baer at the 1st Sioux Falls Ag. Day at the Washington Pavilion. The fine art of judging and appreciating dairy products and the science behind taste tests were demonstrated. This was an opportunity to showcase Dairy Science activities to school students.

Dairy Camp

The dairy camp was a three-day program on the SDSU campus with an over-night stay. Darrel Rennich and Dairy Club students organized this program in May for Elementary, Middle and High School students. There were over 30 participants from 8 to 18 years old. The participating students were given tours of the dairy science facilities and received instruction in dairy cattle evaluation and made ice cream.

Earning-Learning Summer Program

Through a generous grant from the North Central Cheese Industries Association and the College of Agriculture and Biological Sciences the second internship program for high school juniors was conducted.



Two participants were selected by an application and interview process for this 10-week program during the summer. Both students were from the Brookings High School. The students worked with Dairy Science faculty at the dairy plant, dairy research and training facility, and on research projects in the labs. The hands-on program involved all aspects of plant work including product manufacture, as well as farm work. During the final week of the program Dr. Mistry and the students traveled about a thousand miles touring commercial dairy farms and dairy processing and research and development facilities in South Dakota, Iowa and Minnesota and visiting Dairy Science alumni to observe career options in Dairy Science.

We particularly appreciate the efforts of Joe Schuch, B.S.'59; Tim Czmoski B.S.'85; and Jarrod Otta B.S.'89 for their efforts with the K-12 programs. They have spoken on behalf of Dairy Science to school students about their experiences in the dairy industry and future opportunities for students.

Extension

Cheese Workshop: Dr. Raj Nauth, Adjunct Professor in Dairy Science, and Dr. Vikram Mistry conducted an IFT-sponsored workshop on cheese technology in Rosemont, IL, in September. Approximately 13 people participated in this two-day workshop.

Dairy Workshop: Dr. Alvaro Garcia discussed the usefulness of bulk tank sampling to address milk quality at a workshop conducted at the Midwest Dairy Institute in Milbank.

Spanish Workshops: Dr. Garcia conducted several workshops in Spanish to address various dairy topics for the Hispanic workforce in the region.

Tri-state Workshop: Dr. Garcia joined efforts with others in the region to host a workshop entitled "Steering your farm to the future." Dr. Garcia discussed low cost rations.

Distillers Grains Workshop: Dr. Garcia conducted this workshop in Wisconsin and was sponsored by Alltech.

Corn Silage Workshop: Dr. Garcia collaborated with the Midwest Dairy Institute in Milbank to offer training to dairy producers on feeding corn silage.

Dairy Science extension also participated in several South Dakota dairy tours organized by the Department of Agriculture for prospective dairy producers from overseas.

Dairy Science at World Dairy Expo: The Dairy Science department, the South Dakota Department of Agriculture and the Midwest Dairy Institute of Milbank jointly displayed a booth at the World Dairy Expo in Madison, WI in October. The booths highlighted the dairy development efforts and dairy education and research activities and opportunities in South Dakota. Many interested people and alums stopped by to learn about the South Dakota dairy industry and education and to say hello.

ALUMNI ACTIVITIES

Dairy Science alumni continue to make impressive progress in their careers. Listed here is a sampling.

Daryl Boddicker, B.S.'65, M.S.'67 is currently retired in California after many years with Kraft in Glenview. He is currently working with a Venture Capital Group on a project to develop a large cheese plant in the central valley of California.

Dan Carlbon, B.S.'90 is the President of his new business, Precision Blending, near Spearfish, SD.

S. K. Dash, Ph.D.'71 completed 25 years of business in probiotics. He is the owner of UAS Laboratories in Minneapolis.

Troy Gascoigne, B.S.'92 was elected President of North Central Cheese Industries Association.

John C. Gross, B.S.'54 celebrated 50 years of graduation and a highly successful and productive career.

Judges for the 2nd World Dairy Expo Championship Dairy Product Contest in Madison, WI: Cheese: **Mark Johnson**, M.S.'76; Butter: **Matt Siedschlaw**, B.S.'2000; Cottage cheese: **Don Tribby**, B.S.'83.

Cari Knapp (Leuthold), B.S.'2000 and her husband were 2004 AMPI outstanding young cooperators. They are owners of Knapp Time Dairy near Larchwood, IA.

Officials for the 83rd Collegiate Dairy Products Evaluation Contest, Lakeland, FL: Lead Cheddar cheese judge: **Virgil Metzger**, B.S.'69, M.S.'71; Ice cream: **Matt Wolkow**, B.S.'93, M.S.'95; Milk: **Keith Johnson**, B.S.'97; Yogurt: **Don Tribby**, B.S.'83; Alternate: **Mayur Acharya**, Ph.D.'03; Lead computer tabulator: **Jennifer Fieber**, B.S.'98.

Dave Potter, B.S.'82, acquired the rights to Nordica Licensing Inc., and the Nordica name. Dave worked for Nordica in Sioux Falls prior to his employment with Rhodia in Madison, WI. Dave

also initiated a generous new scholarship for Dairy Science students at SDSU.

Roger Ripley, B.S.'68, M.S.'70 is CEO of Accelerated Genetics in Baraboo, WI, President of Genetic Visions, and president of the World Dairy Expo.

Larry Tidemann, B.S.'70, M.S.'72 retired from his position as Associate Dean and Director of the SD Cooperative Extension Service. Larry was elected as Representative in the SD Legislature for District 7 in the November 2004 elections.

Walt Wosje, B.S.'65, M.S.'67, was chosen to continue for a second year to run the Cooperatives Working Together (CWT) program in Washington, D.C. This program is designed to control milk production and improve milk prices.

Please contact us and tell us about your activities.

Mark your calendar

- The 2005 scholarship banquet is at the Performing Arts Center on the SDSU campus on 4th April at 6 pm.
- Student affiliate division meeting of the American Dairy Science Association, 18–19th Feb, Brookings.
- Central Plains Dairy Expo and the National Calf and Heifer Conference, 30 Mar–1st April, Sioux Falls



Virgil Metzger

We have started up a new service for alumni and students: often times we become aware of new job opportunities that would be of interest to either alumni or new graduates or current students. These jobs will be posted on a password protected page within our website. The page is Opportunities for Alumni and Students (under Careers). The username is sdsudairy and password is jackrabbit (lowercase). If you find a position of interest please call us for details.

The 2004 Dairy Science spring seminar included interesting topics. Speakers included the Dairy Science alumni, faculty, students and industry personnel. If you are in the area on Tuesdays at 4 pm in the spring you are invited to join us in DM 100. Topics can be viewed at <http://dairysci.sdstate.edu> starting in January.



SOUTH DAKOTA STATE UNIVERSITY
Dairy Science Department
DM 109, SDSU
Brookings, SD 57007

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