The Annual Awards Program of the American Dairy Science Association and installation of officers was held July 26, 2000, at the Hyatt Regency, Baltimore, Maryland. Awards were presented by representatives of the donors, and citations were read by the chairpersons of the selection committees. The association greatly appreciates the continued support of the donors in presenting annual awards to ADSA members.

Citation for Jimmy H. Clark
Recipient of the 2000
ADSA Award of Honor

The year 2000 Award of Honor recipient is Jimmy H. Clark, Professor of Nutrition, Department of Animal Sciences, University of Illinois in Urbana. Clark has provided continuous and dedicated service to the ADSA as a member or chair of 19 committees, many several times, including the Internal Affairs, Long-Range Planning, Annual Program, and Editorial Board and as ADSA Foundation President. He also has served in all elected offices of the ADSA, including president of our Association in 1993. During his first year as president, the Foundation held its first auction at the annual meeting, which now raises at least $10,000 each year for student scholarships.

Clark's service has been especially student oriented, stemming from his strong belief in educating young people about careers in dairy science. He and an ad hoc committee that he appointed developed mechanisms to encourage communication between student and professional members, encouraging student attendance at the annual meeting, and improving program planning for the Student Affiliate Division (SAD). A staff member was added within ADSA to work at least half time with the SAD to improve the student newsletter, work with students to develop the SAD program for the annual meeting, recruit new student members, and encourage other appropriate student activities. Undergraduates were encouraged to present papers at the annual meeting from data generated by their own original research.

These and other student research-oriented programs have greatly improved communication with undergraduates.

The Award Policies, Procedure, and Program; the ADSA Constitution and Bylaws; and the Handbook for Officers, Committees, and Representatives were all revised during Clark's tenure on the ADSA Board of Directors. The frequency with which the ADSA Newsletter was published was also increased.

During his presidential tenure, Clark appointed a National Needs Task Force charged with developing a coordinated process that would establish research, extension, and teaching priority needs for the dairy industry. These priority needs were presented at the FAIR '95 Conference and were conveyed to appropriate governmental leaders and agencies to obtain funds to meet the needs of the dairy industry. Clark visited congressional leaders in Washington D.C. to discuss research contributions and goals and to emphasize the importance of animal agriculture to the well-being of American citizens.

In addition to Clark's service to ADSA, his research laboratory has developed a national and international reputation in the area of dairy cattle nutrition. He is recognized worldwide as an authority on nitrogen metabolism in dairy cattle. He is widely sought as a speaker throughout the United States and abroad because of his expertise and ability to communicate effectually.
tively to audiences and individuals. He has published 106 peer-reviewed scientific papers, three book chapters, 45 papers in scientific symposia and conference proceedings, 105 abstracts, and 83 popular press articles. He currently is serving as chair of a National Academy of Sciences Committee to revise the nutrient requirements of dairy cattle. He has received numerous awards from academic institutions and commercial companies. These recognitions show the esteem that other scientists have for his accomplishments, his leadership, his vision for the future, and his ability to disseminate his research findings to other scientists, students, the media, and the public. His talent, integrity, productivity, dedication, and excellence come together to make him one of our most valued dairy science leaders.

Citation for J. Lauderdale
Recipient of the 2000 Distinguished Service Award

The year 2000 Distinguished Service Award recipient is James W. Lauderdale, recently retired from the Pharmacia and Upjohn Company, where he spent 30 years as a research scientist and Research Director in Animal Health. His research efforts included the screening and development of compounds active in improving the growth and reproductive efficiency of dairy animals. He was project leader for the worldwide development of bovine somatotropin for dairy cows and use of melengestrol acetate (MGA, Lutalyse) as a performance enhancement agent for controlling estrus cycle length. His research with the prostaglandin Lutalyse, both basic and developmental, led to its worldwide approval for its use as a luteolytic agent in cattle, mares, and swine. His research has been associated with about 50 publications in refereed journals, 30 publications in non refereed journals, and numerous articles published in the popular press.

Lauderdale obtained a B.S. degree in Animal Science in 1962 at Auburn University and M.S. and Ph.D. degrees in Endocrinology and Physiology of Reproduction at the University of Wisconsin in 1964 and 1968, respectively. In 1967 he was employed by the Upjohn Company as a scientist to work in the Reproductive Research Unit of the Agricultural Division. He was promoted to Research Scientist Three in 1972, to Senior Scientist Four in 1974, and Director of the Reproduction and Growth Physiology Research Unit in 1985. He has served as a reviewer for the Journal of Animal Science, Biology of Reproduction, Prostaglandins, as well as National Science Foundation and USDA Peer Review Competitive Grants. His contributions to ASAS have included assignments and/or chair of the Endocrinology and Physiology and L.E. Casida Award Committees and also as a member of the Editorial Board, Director of the Midwest Section, Director-at-Large, member of the Strategic Planning Committee and Chair of the ASAS Foundation. He also served on the Michigan State University Dairy Science Advisory Board. He received the W.E. Upjohn Award in 1978, the ASAS Animal Physiology and Endocrinology Award in 1986 and the Upjohn Award for Achievement in Science and Medicine in 1988.

Although his career has officially been tied to industry, Lauderdale has maintained strong ties with academia, both through research collaborations and friendships that have formed over the years. He has bolstered the scientific careers of numerous students by taking a genuine interest in their research programs by critically challenging interpretations and lending support and encouragement. He also generates enthusiasm among his peers by encouraging colleagues to accept greater responsibility and follow through on their ideas and beliefs. Prior to retirement, Lauderdale’s typical in office work week was 12 hours a day plus weekend time, though he always made time for meaningful interactions with his associates.
Lauderdale currently is working as a consultant with Pharmacia & Upjohn Animal Health in support of various projects and with two start-up companies.

**Citation for Karen Plaut**
**Recipient of the 2000 Agway, Inc. Young Scientist Award**

Karen Plaut, winner of the 2000 Agway Inc. Young Scientist Award, is an Associate Professor and Chair in the Department of Animal Sciences in the College of Agriculture and Life Sciences at the University of Vermont. She has a secondary appointment in the Department of Pathology in the College of Medicine. She has been on the faculty since 1990, and has served as Chair since March 2000.

Karen grew up in a rural community in New York State. While working towards her B.S. at the University of Vermont she spent time in Irene, South Africa, conducting research with various forage sources fed to sheep. Karen obtained her B.S. in Animal Science from the University of Vermont in 1981. Plaut earned an M.S. in Animal Nutrition from Pennsylvania State University in 1983 and a Ph.D. in Animal Science from Cornell University in 1989. Plaut then spent about a little over a year as a postdoctoral fellow in the Tumor Immunology and Biology Laboratory, National Cancer Institute, National Institutes of Health, Bethesda, Maryland, before accepting a position at the University of Vermont. At the University of Vermont, Plaut currently teaches classes in endocrinology, reproductive physiology, and lactation physiology. In addition to her teaching responsibilities, Plaut advises approximately 30 undergraduate students annually. She has advised and completed five graduate students since 1994 and has had three postdoctoral fellows in her lab.

Plaut's research at the University of Vermont has focused on endocrine regulation of the mammary gland. Her research has clearly demonstrated the role of transforming growth factors in mammary development. Plaut's laboratory has shown that growth factors play critical roles in both normal and abnormal mammary development and regression. These findings have important implications in animal agriculture and health. Plaut has developed a very mechanistic approach to this field by utilizing molecular biology, cell and tissue culture, and in vivo biotechnology techniques to find answers to important research questions in mammary biology. Over the past 3 years she has been working on expressing lysostaphin, an antimicrobial protein, which has major implications in the prevention of staphylococcal infections in the mammary gland. Plaut has an impressive research team of graduate students, technicians, and postdoctoral fellows. The importance of her research program is reflected in the funding obtained to support her research. They include two USDA National Research Initiative Competitive grants, two Northeast Dairy Foods Research Center grants, a NASA-NIH grant, and three American Cancer Society grants in addition to competitive funding in the University of Vermont system.

In addition to Plaut's research, she has contributed to the fields of mammary biology and animal agriculture through dedicated service. Over the past eight years, she has served as Vice-Chair and Chair of the ADSA Milk Synthesis Committee and as a member of the international Committee for Mammary Gland Biology and Lactation and the Editorial Board, *Journal of Dairy Science*. Plaut has been selected to serve on review panels for USDA, National Institutes of Health, and the Department of Defense. Her recruitment to the NASA Ames Research Center as Lead Scientist for the Biological Research Project on the International Space Station is further evidence of the respect accorded to her as a scientist. Plaut has coauthored 18 manuscripts, 5 book chapters, and 36 abstracts.
Citation for Arnold R. Hippen  
Recipient of the 2000  
Alltech Inc.  
Graduate Student Paper Publication Award

The 2000 Alltech, Inc. Graduate Student Paper Publication Award is presented to Arnold R. Hippen for his manuscript, “Alleviation of fatty liver in dairy cows with 14-day intravenous infusions of glucagons.” Hippen demonstrated that glucagon decreases the degree of fatty liver in early lactation dairy cows, which also decreases the incidence of ketosis after alleviation of fatty liver. His research has made available important information relating to the etiology of fatty liver in dairy cows and to physiological and biochemical characteristics of this major metabolic disorder.

From 1971 to 1982, Hippen operated a dairy farm and served on the local extension council and Dairy Herd Improvement Association board. He maintained a feed dealership serving dairy, swine, and cattle producers from 1982 to 1988. He received the B.S. (1991) degree in Dairy Science, and M.S. (1996) and Ph.D. (1997) degrees in Nutritional Physiology from Iowa State University. His current appointment at South Dakota State University is the David H. Henry Sustained Professorship and consists of teaching undergraduate and graduate students, providing technical support for South Dakota dairy producers as well as conducting research on dairy farm management and dairy cow nutrition. His research includes nutritional controls of milk composition and metabolic disorders of dairy cows, with an emphasis on fatty liver and ketosis.

Hippen is a member of the American Dairy Science Association, the American Society of Animal Science, Gamma Sigma Delta, and Sigma Xi. Recognitions received for research or scholarly activity include the Iowa State University Research Excellence Award (1997); Iowa State University Nutritional Sciences Council, Griffith Research Award (1997); National Milk Producers Federation, National Dairy Leadership Scholarship (1996); American Feed Ingredients Association, Younglove Scholarship (1995); American Institute of Nutrition, Kraft General Foods Fellowship (1995); Iowa State University Foundation Scholarship (1992) and the Purina Fellowship (1991).

Citation for Gabriella A. Varga  
Recipient of the 2000  
American Feed Industry Association Award

The 2000 recipient of the American Feed Industry Association Award is Gabriella A. Varga, Professor in the Department of Dairy and Animal Science at The Pennsylvania State University. She received this award for her productive and quality research in dairy cattle nutrition. Varga received her B.S. in Biology from Duquesne University (1973), an M.S. in Animal Science from the University of Rhode Island (1975), and the Ph.D. in Animal Science from the University of Maryland (1978). After serving as a Postdoctoral Fellow at West Virginia University, she accepted a position in 1982 as Research Animal Scientist with USDA, ARS. Three years later, Varga accepted a position as Assistant Professor at The Pennsylvania State University. She was promoted to Associate Professor in 1991 and to Professor in 1996. Varga is also a member of the American Society of Animal Science and has served on the editorial boards for both the Journal of Dairy Science and the Journal of Animal Science. She has been active in
both societies, serving on various committees at the regional and the national level. Varga has many areas of interest and expertise in the area of ruminant nutrition. Her research has included work in basic ruminant nutrition as well as more applied research related to feeds and feeding. Her earlier research focused in the area of forage and fiber utilization and carbohydrate nutrition. She has utilized a variety of techniques, including continuous culture systems, in situ work, and large-scale production trials to answer questions of importance to the feed industry and the dairy producer. Her more recent research on carbohydrate nutrition has had a major impact on feeding lactating dairy cows. Her most recent research using bovine somatotropin during the dry period has enhanced our understanding of the physiology and nutrition of the dry cow. This work has the potential to yield large returns to the dairy industry through improving nutrition of transition cows and increasing milk yield. As a testament to her work, Varga has made 30 invited presentations at nutrition and dairy management conferences in the last 10 years. During this period, she has also authored or coauthored 52 articles in refereed journals and published 46 abstracts, along with other popular press articles and the conference proceedings. Her appointment to the National Research Council Committee on Nutrient Requirements for Dairy Cattle is further recognition of her knowledge and expertise in the area of dairy cattle nutrition. Varga is an excellent scientist and a true scholar who makes significant contributions to her university, her professional society and the dairy industry.

Ronald Horst was born in Waynesboro, Pennsylvania, in 1949. Ronald obtained a B.S. degree in Animal Science at West Virginia University, and M.S. and Ph.D. degrees in Dairy Science from the University of Wisconsin. Horst, is with USDA in Ames, Iowa.

Horst began his career as a postdoctorate at the University of Wisconsin, and he then became a Research Physiologist in the Physiopathology Research Unit at the USDA National Animal Disease Center. Since 1986, Ronald has been Research Leader in the Metabolic Diseases and Immunology Research Unit at USDA.

Horst has completed 28 years of research (6 years as a graduate student and postdoctorate and 22 years as a professional). During this time, Horst has contributed widely to the knowledge of nutrition, endocrinology, and physiology of metabolic diseases. Horst has authored or coauthored 249 refereed journal articles, 320 published abstracts, and three patents. His research productivity and accomplishments have established Horst as an international authority in calcium and vitamin D metabolism and milk fever. In recognition of Horst’s accomplishments and stature, the nominee has been asked to serve on journal boards and has received numerous society awards and invitations to speak at national and international meetings. Horst is recognized within ARS as an effective researcher and research manager.

Specifically, Horst led research (personally and through four M.S. and five Ph.D. students) demonstrating new activation and deactivation pathways for vitamin D2 in mammals. He has developed a series of precise analytical methods to quantify vitamins D2 and D3 and their metabolites in blood plasma. Horst collaborated in elucidating the biological consequences in vitamin D toxicity in mammals. Horst and colleagues are recognized internationally for their work on vitamin D metabolism in mammals and birds. He and colleagues have made significant inroads into the prevention and treatment of milk fever in dairy cattle. Clearly, Horst is a tremendous scientist and leader of other scientists. He has a knack for motivating col-
leagues for high productivity, and is a very popular mentor for graduate students. In summary, Ronald Horst is very worthy of the Dean Foods Award through his outstanding accomplishments.

Citation for L. E. Chase
Recipient of the 2000
DeLaval Dairy Extension Award

Larry Chase has established a reputation, both nationally and internationally, as a leading Extension professional. His extension program in dairy nutrition is multifaceted and targeted for a wide variety of clientele. The goal of his program is to enhance the profitability and competitiveness of the New York dairy industry. His approach is to provide training, materials, and support to transfer nutrition principles to field application. He is continually consulted as a source of information by phone and personal contacts. Overall, the majority of his contacts are with the agriservice sector, so he achieves a multiplier effect in transferring the information to dairy producers.

A major portion of Chase’s Extension program has been devoted to educational short courses. These have been targeted primarily to extension agents, feed industry personnel, and veterinarians. This approach of working with multiplier groups will continue to expand as a component of the total extension program.

To meet this growing demand of agriservice for education, Chase and co-workers have established a Dairy Professional program. This program has an industry steering committee to help define the priority topics and educational approaches to be used. A recent example of the type of programming provided through the Dairy Professional program is the Basic Dairy Nutrition course and the Advanced Dairy Nutrition course that have been taught for each of the past two years. Both are targeted at practicing nutritionists and are one week long. Both courses have been filled to capacity each year, and participants travel from as far away as British Columbia, Chile, and Spain.

A cornerstone of Chase’s extension program is the annual Regional Feed Dealers seminars, a series of eight meetings held throughout New York to update feed industry personnel on new concepts and approaches. This activity reaches about 250 nutritionists, veterinarians, and consultants.

A second major Extension effort of Chase is the Cornell Nutrition Conference. Chase took over as General Chairman of this conference in 1985. At that time, the conference was struggling in terms of attendance and budget. Since that time, attendance has increased significantly and the budget is back in the black. Direct contacts by Chase have significantly increased the donations received from commercial companies in support of the conference and financial support was received from 55 companies.

A third important component of Chase’s Extension program is involvement with the Cornell Net Carbohy-
drate and Protein System (CNCPS) model. Chase has been involved with this model approximately 15 years. His role has been primarily in providing training on the biological basis of the model and its use in field applications. Chase is also the primary contact for field questions on the use of the CNCPS model in commercial dairy herd.

He has served as the committee chair for 6 Ph.D. students and 12 M.S. students. Since 1985, he has served as General Chairman for the Cornell Nutrition Conference and currently the ADSA representative on the ARPAS Governing Board.

Citation for James Steele
Recipient of the 2000 DSM Food Specialties Award

The 2000 DSM Food Specialties Award is presented to James Steele, Professor and Head of the Department of Food Science at the University of Wisconsin-Madison, for his contributions to cheese microbiology and biochemistry. Steele earned his B.S., M.S., and Ph.D. degrees from the University of Minnesota. After receiving his doctorate in 1989, he was appointed Assistant Professor at the University of Wisconsin. Steele has served as Chair of the Department of Food Science at the University of Wisconsin-Madison since 1998.

Steele has systematically evaluated the metabolic properties of lactic acid bacteria that influence cheese flavor development. These properties include the peptidase enzyme system of *Lactobacillus helveticus*, amino acid catabolism by lactococci, and glutathione metabolism by lactic acid bacteria. Steele's group developed methods for genetic manipulation of *L. helveticus*, a microorganism important in the production of various cheeses. These methods have allowed him to characterize the peptidase system of this microorganism and examine its role in the development of bitter flavor in cheese. Amino acid catabolism by lactic acid bacteria is thought to be essential for generation of beneficial and off-flavor compounds in Cheddar cheese. Steele's group determined that catabolism of aromatic amino acids is strain specific, and that only some strains of lactococci produce precursor compounds for off-flavor development. In addition, Steele's research demonstrated that methanethiol, an important flavor compound, originates in cheese via an aminotransferase rather than a lyase reaction as previously thought. This information is an important milestone in improving accelerated ripened cheeses. Steele has also shown differences in the ability of strains of lactic acid bacteria to produce glutathione, a compound known to enhance the development of Cheddar cheese flavor. These results are being used to select and construct strains of bacteria for Cheddar production.

In the past five years, Steele and his research group have authored 20 refereed publications, five book chapters, and 35 abstracts. His research accomplishment has been recognized by 19 invitations to present his research, including participation in eight symposia on cheese flavor in the past four years.

In summary, Steele's research has significantly increased our understanding of the microbiology and biochemistry of cheese flavor development. His findings have led to new approaches to the improvement of lactic acid bacteria for use as cheese starter cultures and the acceleration of cheese ripening.

Citation for Molita M. Birchen
Recipient of the 2000 Genevieve Christen Distinguished Undergraduate Student Award

Molita (Molly) M. Birchen, Animal Sciences major at the University of Illinois, is the 2000 recipient of the Genevieve Christen Distinguished Undergraduate Student Award.
Student Award. Molly exemplifies the criteria for the award through her outstanding academic credentials, leadership ability, and involvement in dairy organizations. Her achievements and ability to interact with peers undoubtedly trace back to her being raised on a family farm in which her parents, two brothers, and five aunts and uncles are involved in the operation. Her academic excellence traces back to the support that this family offered during her academic training.

Molly's goal from the time of entering the university was to do research on diseases of dairy cattle. This focus was sharpened at the university where she was a veterinary assistant, working with veterinarians during surgery, and as a laboratory assistant, carrying out a wide range of analytical and animal care activities. She wrote a research proposal that resulted in a project being funded by the University of Illinois on the role of propylene glycol in the transition diets of Jersey cows. The results of the study are to be entered into regional and national competitions. She has also demonstrated technological breadth by developing considerable expertise in computer applications and with commercial experience in dairy foods analysis.

Academic excellence has always been Molly's trademark. The faculty of the Department of Animal Sciences selected her for the Outstanding Freshman and Sophomore Academic Awards. She received the Jonathan Baldwin Turner Scholarship, which is the most prestigious scholarship offered by the University of Illinois College of Agricultural, Consumer and Environmental Sciences, for her academic excellence and leadership qualities. Other honors include being inducted into the Golden Key National Honors Society and Phi Kappa Phi Honors Society, being designated the Illini Dairy Club Outstanding Senior Scholar, and receiving the Gerhard Harpstad Dairy Production Award, the Illini Dairy Club High Academic Scholarship, plus numerous other awards and scholarships.

Leadership and service roles also are an equally important part of Molly's life and academic career. These started in 4-H, FFA, high school, and her community. She served the Illini Dairy Club as chair of numerous committees, as Reporter and as Vice-President. She was the cofounder of the Preventive Medicine Club. She was a member of the Dairy Cattle Judging Team and was active in numerous clubs. In 1998, she organized the Illini Dairy Club's exhibit at the Illinois State Fair. An outstanding example of Molly's service orientation and her computer expertise is the development of web-based modules for teaching ethics, of showing livestock at shows, to youth belonging to 4H and FFA clubs. Service to the community is illustrated by Molly's role as bible study coordinator for the Inter Varsity Christian Fellowship.

Molly's commitment to dairy science and veterinary medicine will continue. She will enroll in a Master of Science program in veterinary clinical medicine this summer and will enroll in the School of Veterinary Medicine, both at the University of Illinois.

Citation for Aaron L. Harris
Recipient of the 2000 Foundation of International Association of Food Industry Suppliers Graduate Research Fellowship Award

The 2000 Foundation of International Association of Food Industry Suppliers Graduate Research Fellowship was presented to Aaron L. Harris. Aaron earned his B.S. degree from Wheaton College and is currently a graduate student at Cal Poly State University in San Luis Obispo seeking both an M.S. degree with a specialization in Dairy Products and an M.B.A. Aaron is conducting his research under the direction of Philip Tong on characterization of the composition of milk received in California dairy product manufacturing.
Barbano was appointed to the faculty at Cornell in 1980. He has been Director of the Northeast Dairy Foods Research Center since 1988. In 1990 he received the ADSA Pfizer Award, and in 1994 he received the Fellow of the Association of Official Analytical Chemists Award. He has served as a member of several ADSA committees and is a very active member of the International Dairy Federation analytical methods committee.

His research interests include the manufacturing and milk quality factors influencing cheese yield and cheese functionality, the improvement of chemical testing methods for the determination of components in milk and other dairy products, and the improvement of the accuracy of calibration of infrared milk analyzers used for payment testing. He has also studied the influence of mastitis and milk somatic cell count on milk quality and cheese yield, the influence of bovine somatotropin on manufacturing properties of milk, and the factors influencing manufacturing costs for cheese and whey products.

Barbano has conducted studies designed to determine the mechanism of fouling of ultrafiltration membranes during milk and whey processing and other studies designed to determine the relationship between processing and other studies designed to deter-
mine the relationship between processing parameters and the functional properties of Mozzarella cheese. He teaches a graduate course in the chemistry of dairy products and actively participates in extension and trade association conferences for the dairy product manufacturing industry.

**Citation for Kywaku Agyemang**
**Recipient of the 2000 International Dairy Production Award**

Kwaku Agyemang, winner of the 2000 International Dairy Production Award, is an Animal Production Scientist with the International Livestock Centre for Africa (ILCA) in Nigeria. He joined the group in 1983 as a postdoctoral fellow and continues in his present role as an Animal Production Scientist.

Agyemang was born in Kokofu, Ghana, and received his B.Sc. in Animal Science from the University of Science and Technology, Kumasi, Ghana in 1977. Agyemang earned his master's and doctoral degrees from Cornell University (Animal Breeding and Genetics, minoring in Statistics and International Agriculture) and holds an additional M.Sc. in Agricultural Economics from the University of London.

The thrust of Agyemang's work has been in smallholder dairy production systems in Africa. His evaluation of the productivity of crossbred cattle in Malawi showed that cattle with 75% Friesian inheritance out performed those with 50% Friesian inheritance in small farm circumstances where cattle were properly managed. This result was in contrast to previous recommendations that discouraged the use of animals of higher Friesian breeding on small farms. This finding was in addition to his previous recommendation that the dairy crossbreeding scheme in Malawi could be based on crosses of the more readily available local Zebu with Friesians rather than on crossing the relatively rare composite breed of Brahman, Sussex, and Africander with Friesians. Acceptance of these recommendations greatly increased the availability of crossbreds to small farmers, and reduced the waiting period by small farmers for crossbreds. These recommendations had important productivity and financial implications for dairy farmers in Malawi.

The most important contribution of Agyemang's work in Africa, however, resulted from his research with N'Dama cattle of The Gambia. Before the work of Agyemang and his colleagues, the N'Dama was generally considered to be an unproductive beef breed capable of producing only small quantities of milk. Agyemang initiated and implemented a successful large-scale milk recording scheme in village N'Dama herds. From this database, Agyemang and coworkers showed that the milk production of N'Dama cattle was four to five times higher than what the research community had previously thought. The published work of Agyemang and his colleagues has highlighted the milk production of the N'Dama cattle and subsequent studies have established the hardiness of this breed under harsh disease and nutritional conditions.

Agyemang's current research activities are in peri-urban and inner town smallholder dairying aimed at developing feeding and management technologies applicable to small-scale producers. Early indications from these activities are that those small dairy producers using home and garden-grown fodder of herbaceous or tree legumes can make reasonable profits. Results of related studies show that inland valleys hold large potential to increase agricultural productivity in the region. Several hundred farmers in these countries are testing dairy models developed by Agyemang and colleagues.

The research efforts of Agyemang have resulted in over 100 publications, nearly 50 in scientific refereed journals, 25 in edited proceedings, and 15 in books, solicited chapters and articles.

Citation for Paul VanRaden
Recipient of the 2000
J. L. Lush Award

The 2000 recipient of the J. L. Lush Award in Animal Breeding is Paul VanRaden, Research Geneticist for the Animal Improvement Programs Laboratory, Agricultural Research Service, USDA. His research has improved quantitative genetic theory, increased understanding of genetic evaluations, provided more complete information to more dairy producers, and sped improvement of dairy cattle worldwide.

VanRaden received a B.S. in dairy science from the University of Illinois and M.S. and Ph.D. degrees in animal breeding from Iowa State University. His 1986 doctoral thesis on computational strategies for estimation of variance components received awards from ADSA and Iowa State University. He continued his work on genetic evaluation of dairy cattle as a postdoctoral researcher at Iowa State University and the University of Wisconsin. With funding from Holstein Association USA, he developed new genetic evaluation programs for conformation traits of Holsteins; those programs were implemented in 1988 and continued to be used until 1991.

After joining the USDA, VanRaden developed methods to simplify and to improve the animal model. He developed procedures to compute measures of relationship and inbreeding within and across dairy cattle breeds, and national evaluations have included inbreeding coefficients since 1994. By mating animals that are less related, breeders can avoid losses from inbreeding depression of about $50 million per year.

Dairy cattle in the United States can be selected not just for yield and conformation but also for longevity and mastitis resistance because of VanRaden’s research. He developed a method to predict genetic merit for longevity earlier in a cow’s life and introduced the first national productive life evaluation for bulls in 1994. He also worked with M. Schutz to design a national evaluation system for somatic cell scores to reduce mastitis. In 1996, USDA cow rankings were released in addition to bull rankings for those two new traits. In 2000, VanRaden improved a multitrait analysis of genetic merit of productive life to include genetic merit for yield traits, somatic cell score, and type traits.

To aid in increasing overall profit by emphasizing traits according to economic value, VanRaden developed the “Net Merit Dollars” selection index, which has been used to rank US dairy bulls since 1994. This index combined genetic merit for yield adjusted for feed cost, longevity, and mastitis resistance. The USDA net merit indexes were expanded by VanRaden in 1999 to predict economic merit for cows in markets with fluid and cheese pricing. In 2000, VanRaden redefined the net merit index to a lifetime product function using actual incomes and expenses. Annual benefits of more than $10 million are expected.

Recent research by VanRaden involves methods to include new, less regulated data in national evaluations. He developed a data collection rating to measure accuracy of lactation records and procedures to weight records according to their accuracy. Now, more dairy farms can contribute data, and producers can choose from new options to reduce costs for data collection. His most recent research focuses on international genetic evaluation of dairy cattle.

Citation for H. D. Goff
Recipient of the 2000
Kraft Foods Teaching Award

The recipient of the 2000 Kraft Foods Teaching Award is Doug Goff from the Food Science Department of the University Guelph, Canada. He is being recognized for his outstanding dedication and successes concerning all aspects of teaching dairy science in a food science curriculum.

H. Douglas Goff grew immersed in the dairy processing industry in Atlantic Canada and obtained his
basic dairy education from Nova Scotia Agricultural College (Associate Diploma in Agriculture, 1980) and University of Guelph (B.Sc., Dairy Science, 1982). His graduate degrees (M.Sc., Dairy Science, 1984 and Ph.D., Food Science, 1988) are from the Cornell University. Doug joined the University of Guelph as Assistant Professor in 1987 and rose through the ranks to his present position of a Professor, with major responsibilities for teaching food processing and dairy technology subjects. His main research interests are in dairy science and he has earned international reputation as an expert in ice cream technology and fundamental science of frozen food systems.

His outstanding teaching activities stretch far beyond classroom and laboratory, including also short courses; undergraduate advising; curriculum planning; development and maintenance of an extensive dairy science and technology education website used by thousands of “visitors”; supervision of a highly regarded graduate teaching and research program; and, last but not least, administration of a major Canada-wide international student exchange program with Europe. When the University of Guelph incorporated the former separate program in Dairy Science into the B.Sc. Food Science major, Goff was responsible for managing the consolidation.

He succeeded in the maintenance of a strong presence of dairy science in the combined curriculum, resulting in wider exposure to the dairy science subjects for more food science students. In total, Goff has taught 30 course offerings in 10 different courses during his 13 years on the Guelph faculty. In his teaching evaluations he consistently receives extremely high scores and enthusiastic comments from his students, indicating true teaching excellence. One of his exceptionally successful educational accomplishments is a development and maintenance of an extensive Dairy Science and Technology Education website, enjoyed and utilized by literally thousands of teachers, students and interested professionals worldwide. It consists of 40 web pages and over 200 figures and diagrams and typically receives 5000 visitors per week. The enthusiastic thank you notes regarding the site attest to his effectiveness as a teacher of dairy technology for students all over the world.

Goff’s educational interests include industrial applications, both as a part of his basic university courses as well as through his graduate teaching, research, industrial sabbatical sojourns and extension. Under his leadership, the long-running University of Guelph Ice Cream Continuing Education Short Course has become one of the most successful ventures of its kind in Canada, with attendees coming from all over the world. He also taught ice cream short courses in England, Thailand, and Australia. In all of his professional activities including a very active research program, Doug’s balanced approach is widely admired for its professionalism and thoroughness. He is the author of almost 100 refereed and technical publications, including 10 book chapters. He excels in all aspects of academia and does it all with genuine enthusiasm.

From left to right; J. Moran, donor representative, presented the 2000 Kraft Foods Teaching Award to H. D. Goff, D. J. Schingoethe read the citation.

Citation for Vaughan Crow
Recipient of the 2000 Marschall Rhodia International Dairy Science Award

The 2000 Marschall Rhodia International Dairy Science Award is presented to Vaughan Crow, Principal Research Scientist at the New Zealand Dairy Research Institute, Palmerston North, New Zealand. This award recognizes his valuable contribution to the fields of microbial physiology, microbial enzymology, and the application of microbes and enzymes to dairy processing, particularly in the cheese industry.

In each field he has generated not only international prestige in the scientific community, but broad recognition in the global dairy industry. This is manifest in his considerable publication record and in the commer-
Crow's work on propioni bacteria improved the production consistency of Swiss-type cheeses and the distinctive New Zealand cheese, Egmont, that have these bacteria added during manufacture as adjuncts to the starter lactococci. His work on starter bacteria led to a significantly greater understanding of their role in Cheddar cheese manufacture and flavor development during ripening. His more recent work on the role of nonstarter bacteria in targeted cheese flavor development and accelerated ripening was initially met with considerable skepticism. However, his studies have progressed to the point where about 50% of the total mature Cheddar production will include the deliberate addition of nonstarter lactic acid bacteria (NSLAB). These bacteria are those Crow showed were dominant in high-quality Cheddar cheese and he has demonstrated their efficacy in directing desirable flavor development in a consistent and accelerated manner.

Crow's work showed that starter lactococci were responsible for about 80% of flavor development, but the NSLAB were responsible for the final 20%. It was this final 20% of flavor development, occurring over the final 12 to 18 months of ripening that gave mature Cheddar the required organoleptic attributes. Further, the research lead by Crow showed that 80% of the flavor defects were caused by NSLAB. Based on this information, Crow recommended controlling the flavor development through the deliberate addition of NSLAB. He proposed they would effectively prevent adventitious colonization of the cheese during manufacture by undesired NSLAB.

As a result of the success of Crow's research, the cheese industry has been provided with recommendations on the routine use of NSLAB adjuncts in the manufacture of Cheddar cheese. These stains provide improved flavor quality and shorten the ripening time of cheese. This will result in improved consistency of target cheese flavors and savings in cheese production costs in terms of reducing waste and reduced ripening costs.

These remarkable achievements by Crow are recognized by the presentation of this award.

Citation for Timothy R. Mackie
Recipient of the 2000
National Milk Producers Federation
Richard M. Hoyt Award

Timothy R. Mackie is Research Scientist, Dairying Research Corporation LTD, Hamilton, New Zealand. He earned his bachelor's degree in Agricultural Science from Lincoln University, New Zealand, and his Ph. D. in Animal Science from Cornell University, Ithaca, New York. Mackie's research areas focused on milk quality, milk protein, and the effect of various feeding and management practices on milk protein and fatty acid composition. His major research contributions are in the following areas: 1) utilization of diets using computer models to ensure the supply and balance of AA were optimum, and 2) examination of both nutritional and endocrine controls of milk protein synthesis. A major result of his research was to demonstrate that the potential for the mammary gland to produce milk proteins is not fully utilized even in well-fed cows. Milk protein yields...
were increased by 25% during the hyperinsulenic-euglycemic clamp. Mackle's results showed that the major interorgan pool for transport of AA for milk protein synthesis was plasma. Red blood cells played a minor role, which was limited to a small portion of a few essential amino acids. Mackle found that while arterial-venous difference for essential amino acids was literally related to their arterial concentration, milk protein was not related to either variable. His results demonstrated that both blood flow to the mammary gland and amino acid extraction efficiency by the gland varied according to circulating amino acid concentration and the amino acids needs of the mammary gland. Mackle's research results have implications and direct applications to dairy systems.

Citation for Edward Dudley
Recipient of the 2000 National Milk Producers Federation Dairy Foods Division Graduate Student Paper Presentation Contest in Dairy Foods Research

Dudley's research is entitled, "Citrate catabolism and succinate production by Cheddar cheese non-starter lactobacilli." He is currently working towards the completion of his Ph.D. in Bacteriology at the University of Wisconsin, Madison under the direction of James Steele. Upon completion of his doctorate, Ed will begin a postdoctoral assignment at the University of Maryland with funding from the National Institutes of Health. Dudley will be joining a research group charged with characterizing enteroaggregative Escherichia coli.

Citation for Frederico Moreira
Recipient of the 2000 National Milk Producers Federation Production Division Graduate Student Paper Presentation Contest in Dairy Production

First place was awarded to Frederico Moreira for his superb presentation entitled "Pregnancy rates to a timed insemination in lactating dairy cows pre-synchronized and treated with bovine somatotropin: cyclic versus anestrus cows." His research has focused on the pharmacological manipulation of the estrous cycle through the use of timed insemination. His Ph.D. program is under the direction of Bill Thatcher at the University of Florida.
Citation for A. J. Heinrichs
Recipient of the 2000
Nutrition Professionals, Inc.
Applied Dairy Nutrition Award

The recipient of the 2000 Nutrition Professionals Applied Nutrition Award is Arlyn Judson Heinrichs, professor in the Dairy and Animal Science Department of Pennsylvania State University, with responsibilities in extension and research in dairy cattle nutrition and management. Heinrichs' emphasis has been on management of dairy replacements and forages. He has conducted applied research studies on calf and heifer management practices, milk replacer ingredients, coccidiostat feeding for calves, protein requirements of calves and heifers, and growth characteristics of contemporary dairy heifers in the United States. He has published regional and national standards of heifer growth for all six major breeds of dairy cattle. These standards are widely used across the United States as benchmarks for heifer weight and height at various ages.

A coproduct of this work has been a revision of the Holstein Heifer Weight Tape used by farmers around the world to estimate body weight from heart girth measurements. His work led to the development of allometric prediction formulas that estimate body weight from various other body measurements.

In its National Dairy Heifer Evaluation Project during 1991 to 1992, the USDA extensively used the work published by Heinrichs on heifer management practices and growth. This first-ever national assessment of dairy replacements health, management, and growth involved 1811 dairy farms in 28 states, and then was expanded to represent 78 percent of the United States dairy population. Heinrichs served the USDA as lead dairy scientist on that project. Twelve peer-reviewed publications resulted from the work.

Heinrichs has published over 60 journal articles and book chapters, many relating to dairy calf and heifer management and nutrition. His most recent work has focused on housing requirements and on nutrient requirements of dairy heifers managed to allow them to calve at or before 24 months of age.

Heinrichs has been involved in several forage management research investigations that complement his heavy extension emphasis in dairy forage research. The Penn State Forage and Total Mixed Ration (TMR) Particle Size Separator, of which he was a coinventor, is an example. The separator is a scaled-down, simplified version of the American Society of Agricultural Engineering standard and has been used worldwide since its introduction in 1995. Use of the separator on the farm allows for correction of forage particle length during the harvest phase, and allows nutritionists and farmers to measure forage and TMR particle size of the feeds being fed. Some of his recent studies have
involved using the particle separator analysis to develop effective fiber indices for forages.

Heinrichs has given many invited lectures and workshops in the United States and other countries. He has lectured in over 25 states and provinces in North America, and in six other countries. For the past four years, he has been involved in teaching an annual short course in Dairy Nutrition with the University of Costa Rica and the Center of Animal Nutrition for Latin America.

His applied research has led to improvements in management practices for dairy replacements and forage that have been incorporated on many farms across the nation.

Citation for R. Michael Akers
Recipient of the 2000 Pharmacia & Upjohn Physiology Award

The recipient of the 2000 Pharmacia & Upjohn Physiology Award is R. Michael Akers. A member of the faculty of the Dept. of Dairy Science at Virginia Polytechnic Institute and State University, Akers has been exceptionally effective in his research to advance the understanding of milk synthesis and lactational physiology to increase productivity in the dairy industry and provide an understanding of the role of growth factors in the development of human breast cancer. He was among the first to develop receptor assays for prolactin, characterize circulating concentrations of hormones associated with mammary cell growth and differentiation of the secretory epithelial cells, and study changes in concentrations of oxytocin, catecholamines, and prolactin in response to milking related stimuli and stray voltage. He has completed a number of studies related to the structural and biochemical differentiation of the secretory cells of the mammary gland, including effects of periparturient milk removal, disruption of microtubule formation, comparison of development in high and low production animals, and effects of milk accumulation. Other work has focused on development of several lines of immortalized bovine mammary epithelial cells which secrete recombinant bovine insulin-like growth factor-I (rIGF-I). His laboratory has characterized developmental patterns for the cells, as well as effects of transgene activity on secretion of IGF binding proteins, and studied the effects of extracellular matrix proteins on transgene activity. Akers and his graduate students have also produced transgenic mice that synthesize and secrete rIGF-I in mammary tissues. The induction of rIGF-I secretion has been associated with altered mammary development. Akers has also collaborated with scientists at the Danish Institute of Agricultural Sciences and the Ruakura Agricultural Research Centre in Hamilton New Zealand to investigate the effects of ovarian hormones and nutrition on local mammary tissue synthesis and secretion of IGF-I and related binding proteins. This work is relevant to enhancement of milk yield via regulation of the number of precursor cells capable of developing into the secretory epithelial cells of the lactating mammary gland.

A native of Virginia, Akers received his B.S. and M.S. degrees from Virginia Tech in 1974 and 1976, respectively, and was awarded the Ph.D. degree from Michigan State University in 1980. After a short stint as a research physiologist at the USDA Milk Secretion and Mastitis Laboratory in Beltsville, Maryland, Akers returned to Virginia Tech as a faculty member in 1981. Since 1996, he has been the Horace E. and Elizabeth F. Alphin Professor of Dairy Science at Virginia Tech.

Akers has been exceptionally productive over his entire career. He has authored or coauthored over 119 refereed scientific papers including three book chapters, six conference proceedings and has presented over 120 papers. He received the 1986 Young Scientist...
Award and the 1993 Borden Award from the American Dairy Science Association, the Gamma Sigma Delta Research Award of Merit in 1996 and was named the AgResearch Senior Research Fellow at the Ruakura Agricultural Research Centre, Hamilton, New Zealand. He is currently Editor for the Journal of Dairy Science, and is on the Editorial Boards for the journals Domestic Animal Endocrinology and Livestock Production Science, as well as being a Panel Member for the Breast Cancer Research Program of the Department of Defense for the past three years.

Citation for Lane O. Ely
Recipient of the 2000 Pioneer Hi-Bred Forage Award

The recipient of the 2000 Pioneer Hi-Bred Forage Award is Lane O. Ely, Professor in the Animal and Dairy Science Department at the University of Georgia, Athens. Forages have been a central focus of his extension and research programs. His efforts have assisted dairy farmers in the Southeastern United States in the production and utilization of high quality forages. His research has focused on small grains and sorghum silages. Ely and his cooperators have evaluated methods to enhance silage fermentation for a variety of crops with the addition of microbial inoculants. This research led to an understanding of the importance of microbial numbers on fermentation and the identification of a specific microorganism for use as a silage additive. As direct-cut material, small grains are difficult to ensile. The addition of inoculants was shown to increase the recovery of nutrients in direct-cut silage. Ely’s research has helped producers to decide when to use inoculants.

Ely has also examined the potential to ensile waste products from the food industry, such as salad waste. He combined salad waste with other byproducts to produce a silage that is stable and can be stored for later feeding. Mixtures combining poultry litter, cotton gin trash, molasses, and inoculants with salad waste were successfully fermented but were not equal for milk production to silage made by combining salad waste with ground corn. However, the use of corn was not economically competitive with direct feeding the salad waste to replacement heifers, dry cows, or beef cows.

Ely has utilized on-farm trials to demonstrate the importance of forage testing and forage quality for the dairy producer. One series of three trials involved 37 dairy farms that were visited each month for a year. Forage samples were collected and tested, and rations were balanced. The trials demonstrated the large variation that exists in forage nutrient composition in commercial operations and the importance of frequent forage testing. In general, milk production increased with more frequent forage testing and ration balancing. A key component of Ely’s program has been ration balancing for efficient production. This has involved an ongoing educational program to teach people how to use computers and ration balancing programs, and development of computer programs to balance rations. He was a member of two regional committees that developed the DART Dairy Ration Program and subsequent revisions.

Ely’s extension efforts in forages have included regular contributions to the Georgia Dairyfax Newsletter, publishing articles in major dairy magazines, writing extension bulletins, conducting training sessions for county extension educators, and making presentations at county and regional meetings for producers relating to management and utilization of forage for the dairy cow. Through his extensive outreach efforts, Ely has ensured that the results of his research have been available to dairy producers in Georgia and around the nation.
Citation for Edward J. DePeters
Recipient of the 2000
Purina Mills, Inc. Teaching Award

The 2000 Purina Mills, Inc. Teaching Award is presented to Edward DePeters, Professor in the Department of Animal Science at the University of California in Davis, in recognition of his demonstrated excellence in teaching and the high personal and professional priority that he places on motivating and educating students. DePeters regularly teaches three lecture and laboratory courses that include field trips to enhance learning. In addition, he directs student research projects that stress problem-solving and independent thinking. DePeters is known as a teacher who is scientifically rigorous and challenging. His clearly prepared and precisely delivered lectures, given with a wonderful sense of humor, provide the relevant information for his students. His students describe him as a teacher with a passion for his subject matter and an enthusiasm for learning that is contagious. His interactive teaching style stimulates considerable questions and helps to make his classes less intimidating, if not enjoyable. Students greatly appreciate his willingness to interact with them outside of the classroom and to provide the help and direction they need as individuals to assist in mastering the subject matter in his courses.

DePeters' concern, dedication, and service to students extend beyond the classroom. Students routinely request him for their advisor because he has a reputation as an effective and conscientious advisor who is committed to each individual. In 1994, the College of Agricultural and Environmental Sciences at the University of California-Davis awarded him the Outstanding Advising Award. DePeters is thoroughly involved in student organizations and regularly attends student-sponsored activities and events. He is often the inconspicuous force behind these activities. He offers more than support and sets a professional example for students and encourages them to take responsibility and have pride in a job well done. Students indicate that his dedication to their development and active participation in student-related activities influence not only their academic performance, but also affect their sense of personal integrity, responsibility, and leadership. Edward DePeters is an outstanding teacher with a strong commitment to students that commands the utmost respect from his peers.

Citation for Michael S. Pieperbrink
Recipient of the 2000
Purina Mills, Inc. Research Fellowship

Purina Mills, Inc. has awarded one of the three 2000/2001 Purina Mills Research Fellowships to Michael S. Piepenbrink. He is currently conducting research on nutritional modulation of liver metabolism of dairy cows during the transition period.

Piepenbrink is pursuing his Ph.D. degree from Cornell University, working under the supervision of Thomas Overton. Michael received his M.S. degree from South Dakota State University, Brookings. He earned his B.S. from the University of Illinois, Urbana-Champaign, in 1994.

Piepenbrink is a member of the American Dairy Science Association. Among Piepenbrink's credits, he has authored or coauthored several journal articles on the amino acid nutrition of lactating dairy cattle, including models for predicting milk protein synthesis, ruminal protein degradation and amino acid residues available for intestinal digestion and the amino acid nutrition of...
Erskine has maintained an active program of excellence in udder health research. He was one of the leaders in the early promotion of the “two disease” concept of bovine mastitis and its control. His study of infection rates and management differences between high and low somatic cell count herds provided some of the first documentation that herds with low somatic cell counts may still have substantial clinical mastitis caused by environmental pathogens. His epidemiological approach in that research provided a novel tool for the study of udder health problems and laid the groundwork for numerous other epidemiological investigations on mastitis.

Erskine's research has substantially enhanced our understanding of the interactions between nutrition and mastitis control. He has been a leader in demonstrating the importance of vitamin E and selenium nutrition in promoting immune function and resistance to intramammary infection in dairy cattle. His studies on the use of prepartum parenteral vitamin E administration have addressed both the biological interactions and the clinical effects associated with this approach for enhancing mastitis resistance. He has further explored the relationships between nutrition and mastitis resistance in studies of the role of ascorbic acid in recovery from coliform mastitis. Furthermore, his use of induced intramammary coliform infections in selenium-deficient and selenium-adequate dairy cows has substantially improved our understanding of the inflammatory process associated with coliform infections. Through his research program, Erskine has developed strategies for early recognition and therapy of acute intramammary infections.

Erskine's research program on clinical mastitis also has characterized the incidence of clinical mastitis in transition dairy cows. He has also studied the effects of rumen-protected choline on hepatic metabolism and milk production of transition dairy cows. Upon completion of his Ph.D. degree, he plans to seek a position as an assistant professor at a land grant university with both teaching and research responsibilities. He would like to develop a research program related to nutritional modulators of metabolism in transition dairy cattle to minimize postpartum metabolic disorders.

Citation for Ronald J. Erskine
Recipient of the 2000
West Agro, Inc. Award

The recipient of the 2000 West Agro, Inc. Award is Ronald J. Erskine, Associate Professor in the Department of Large Animal Clinical Sciences at Michigan State University, East Lansing. Erskine received his B.S. and D.V.M. degrees from the University of Illinois. He then attended The Pennsylvania State University, receiving his M.S. degree in 1987 and completing his PhD degree in 1989. Erskine was an assistant professor at Auburn University from 1989 to 1991, before joining the faculty at Michigan State University.

From left to right: T. Hemling, donor representative, presented the 2000 West Agro, Inc. Award to R. Erskine. W. L. Hurley read the citation.
cows administered bovine somatotropin and has substan-
tially clarified the association between milk pro-
duction and clinical mastitis. His continuing research
efforts are leading to new approaches of teat disin-
fection.

Erskine has published more than 37 articles in peer-
reviewed journals and written 3 book chapters. He has
built an international reputation as an invited speaker
on the therapy of environmental mastitis infections.
As principal investigator, he has successfully solicited
nearly $175,000 in research support in the past five
years. Erskine is an active member of a number of
professional societies, including ADSA, American Vet-
ery Medical Association, American Association of
Bovine Practitioners, and National Mastitis Council.
He is recognized as an outstanding educator, contribut-
ing to nine courses in the veterinary medicine program
at Michigan State University and receiving the Excel-
lence in Teaching Award from the College of Veterinary
Medicine. He currently supervises graduate programs
for three Masters degree students and three PhD
students.

Citation for Kathryn J. Boor
Recipient of the 2000
ADSA Foundation Scholar Award
Dairy Foods Division

Kathryn Boor grew up on a dairy farm in upstate
New York. She completed her B.S. degree at Cornell
University, her M.S. at the University of Wisconsin, and
her Ph.D. at University of California-Davis. Before
entering her graduate pro-
gram at University of
Davis she was involved in
a research project study-
ging the goat milk produc-
tion, processing, and con-
sumption of milk among
limited-resource farmers
in Kenya, East Africa. She
also spent 6 years devel-
opping Cooperative Exten-
sion programs in food
safety and food microbi-
ology for the food and dairy
processing industries and for consumers in California.
Upon completing her Ph.D., she joined the Food Science
extension/research faculty at the University of Cornell.
Kathryn quickly established a dairy microbiology qual-
ity and safety extension (60%) and research (40%) pro-
gram at Cornell University that is dedicated to the
improvement of dairy product shelf life, wholen-
someness, and safety through reduction of spoilage and
pathogenic bacteria in processed products and raw
milk. Kathryn’s research centers on the development
of rapid methods to identify and track spoilage and
pathogenic bacteria in dairy systems and to extend the
shelf life of dairy products. Her long-term goal is to
create an integrated and interactive network between
Cornell University, state regulatory agencies, and the
dairy industry to improve dairy product safety and
quality. Since joining the Cornell faculty in 1994, Kath-
rym has published more than 90 articles, abstracts, and
extension publications. Eight graduate students have
completed graduate degrees in food science under her
direction. She currently advises five Ph.D. students,
one postdoctoral associate, and seven undergraduate
researchers. Kathryn has been successful in attracting
over $2.5 million in grants and contracts. She has
 gained the respect of the processing industry for her
ability to solve problems at many different levels. She
is a natural leader who has developed a number of
programs for the dairy industry and her own Food Sci-
dence Department. Kathryn currently serves as director
of Cornell University’s Food Safety Laboratory as well
as director for the Milk Quality Improvement Program.
The Milk Quality Improvement Program is a research/
extension program designed to monitor raw milk qual-
ity and the initial and long-term quality of commercially
processed and packaged fluid milk products in New
York State. This extension program assists New York
State dairy plants with vitamins A and D fortification
and the identification and correction of handling and
processing problems that affect dairy product quality.
Matthew Lucy grew up in central New York. His love for dairy cattle research started with a part-time job of milking cows for a private dairy while attending Cornell University. While working on his B.S. degree at Cornell, he also became interested in endocrinology and research. Upon graduating from Cornell University, he entered a graduate program at Kansas State University (M.S. degree) where he studied dairy cattle reproduction. He then went to University of Florida where he completed his Ph.D. (1990) while continuing his work in dairy cattle reproduction. Matthew then worked at Monsanto as a postdoctoral associate looking at postpartum dairy cattle that had been treated with recombinant bovine somatotropin (bST). He then accepted a position as an Assistant Professor at the University of Missouri. After arriving at the University of Missouri (1993) he quickly developed a quality research program following the reproductive changes in dairy cattle treated with bST. He determined the location of the bST receptor in the large luteal cell using in situ hybridization procedures and was one of the first to demonstrate that bST stimulated follicular growth and increased the turnover of ovarian follicles. Matthew then turned his focus to the control of the expression of the somatotropin receptor. This research has determined that three gene promoters control the expression of the somatotropin receptor and that bST affects the expression of the P1 promoter. Lucy has currently authored or coauthored 56 referred journal articles, 70 abstracts, eight book chapters, and one patent. During his career, he with his collaborators has brought in more than 1.6 million dollars into the reproductive research area. Matthew has kept his finger on the pulse of applied research by collaborating with other researchers. This interaction has allowed him to visualize theoretical concepts achieved in the laboratory with the forces that actually drive dairy production and the resulting reproduction problems. His applied interest was instrumental in the testing of the Controlled Internal Drug Release device that is currently being reviewed by the FDA. His research has been recognized on a national and international level. This research has been highlighted at several international meetings, which he has attended as an invited speaker. He currently teaches a graduate level Endocrinology course for 10 to 20 graduate students. Students comment on his enthusiasm, love for the subject, and up-to-date material. Lucy is a member of ADSA and is involved with ADSA programming and intersociety publications. He has helped develop several highly successful symposia and continues to help the Association to become a leading force in dairy production.