

About the Authors

Jimmy H. Clark (*chair*) is professor of nutrition in the Department of Animal Sciences at the University of Illinois. The focus of his studies is both applied and basic research related to ruminant nutrition and metabolism. He has been awarded numerous honors for his work in research, teaching, and extension. Clark served two consecutive terms (1981–1987) with the National Research Council's Committee on Animal Nutrition and participated in the publication of the 1989 revised edition of *Nutrient Requirements of Dairy Cattle*. He received his undergraduate degree in agriculture from Murray State University in Kentucky and his Ph.D. degree in Animal Nutrition from the University of Tennessee.

David K. Beede is professor and C.E. Meadows Endowed Chair for Dairy Nutrition and Management at Michigan State University in the Department of Animal Science. He received his undergraduate degree in animal science from Colorado State University, his master's degree in ruminant nutrition from the University of Nebraska, and his Ph.D. degree from the University of Kentucky in ruminant nutritional physiology and biochemistry. Beede's expertise in nutritional management of dairy herds has led him around the world consulting on six continents.

Richard A. Erdman is professor of ruminant nutrition and chair of the Department of Animal and Avian Sciences at the University of Maryland. His research includes work in energy and applied animal nutrition. Erdman pioneered research on the effect of trans fatty acids on milk fat production. At the University of Wisconsin, he received his undergraduate degree in animal science and agronomy. Erdman continued his education at the University of Kentucky, where he received both his master's and Ph.D. degrees in animal science.

Jesse P. Goff is Veterinary Medical Officer with the Mineral Metabolism and Mastitis Unit at the National Animal

Disease Center at the U.S. Department of Agriculture. His expertise is in diseases of mineral metabolism in domestic animals with special emphasis on milk fever in dairy cows. Goff received his undergraduate degree in microbiology from Cornell University. At Iowa State University he furthered his studies and received his master's degree in veterinary physiology, his doctorate degree in veterinary medicine, and his Ph.D. degree in veterinary physiology and nutritional physiology.

Ric R. Grummer is professor at the University of Wisconsin in the Department of Dairy Science. His research interests are in lipid metabolism in dairy cattle, specifically the utilization of supplemental fat in dairy rations, etiology and nutritional prevention of fatty liver and ketosis, and nutrition of the transition cow. Grummer's educational background includes his undergraduate degree received from the University of Wisconsin, his master's degree and his Ph.D. degree received from the University of Illinois, all from the Department of Dairy Science.

James G. Linn is professor and extension animal scientist in dairy nutrition at the St. Paul campus of the University of Minnesota's Department of Animal Science and Extension Service. His undergraduate education began at the University of Minnesota where he received his degree in animal science. Linn continued at the University of Minnesota and received his master's and his Ph.D. degrees in Nutrition, with an emphasis in ruminant nutrition for the latter degree. Linn's expertise is a direct result of his 16 years of involvement with the University of Minnesota's Extension Programs.

Alice N. Pell is professor at Cornell University in the Department of Animal Sciences. She received her undergraduate degree and a *summa cum laude* on her thesis in architectural science from Radcliffe College at Harvard

University. Her master's degree in education is from Harvard Graduate School of Education; her master's and Ph.D. degrees in animal science from the University of Vermont. Pell's research areas and teaching fields include rumen microbiology and applied nutrition. She has served in numerous advisory capacities including her service on the National Research Council's Committee on Animal Nutrition.

Charles G. Schwab is professor in the Department of Animal and Nutritional Sciences at the University of New Hampshire. His interest in dairy science is deeply rooted as he was born and raised on a 200-acre dairy and livestock farm in Wisconsin. Schwab received his undergraduate degree in animal sciences, his master's degree in dairy science nutrition, and his Ph.D. degree in dairy science and nutritional sciences, all from the University of Wisconsin. His research interests include an emphasis in amino acid and protein utilization in dairy cattle nutrition.

Trevor Tomkins is President and Chief Operating Officer of Milk Specialties Company. After securing his undergraduate degree in agriculture and animal production, he continued at the University of Reading in England to receive

his Ph.D. degree, also in animal production. His primary area of expertise in nutrition and animal health products for the world-wide livestock industry is supplemented by global experience in the animal feed industry and a background in business.

Gabriella A. Varga is professor of animal science in the Department on Dairy and Animal Sciences at the Pennsylvania State University. She received her undergraduate degree in biology from Duquesne University, her master's degree in animal science from the University of Rhode Island, and her Ph.D. degree in animal science from the University of Maryland. Varga's research has made major contributions to the area of carbohydrate nutrition.

William P. Weiss is professor of dairy science at The Ohio Agricultural Research and Development Center at The Ohio State University. His general research interests include utilization of forages by dairy cattle, feed evaluation, and vitamin E and selenium nutrition. At Purdue University, Weiss studied animal sciences and received both his undergraduate and master's degrees. He received his Ph.D. degree from The Ohio State University in dairy science.