

all experiments pigs were housed individually in environmentally controlled buildings and weighed weekly. In the maintenance experiments pigs were provided their daily feed allowance in 2 equal meals and water was available at all times. Fecal samples were collected weekly from each pig and pooled to determine digestibility of nutrients by the indicator method. We determined the NE values of specific ingredients using the substitution method and comparative slaughter at 2 stages of growth with ad libitum feeding. In each case ingredients and diets were analyzed to allow calculation of predicted energy values using the nutrient-based European systems. Subsequent speakers will discuss each project in greater detail.

**Key Words:** net energy, pigs

**193 North American Swine Energy System: Experimental strategy and methods.** G. L. Allee\*<sup>1</sup>, R. B. Hinson<sup>1</sup>, J. E. Pettigrew<sup>2</sup>, J. F. Patience<sup>3</sup>, H. H. Stein<sup>2</sup>, D. Y. Kil<sup>2</sup>, A. D. Beaulieu<sup>3</sup>, F. Ji<sup>2</sup>, and L. L. Stewart<sup>2</sup>, <sup>1</sup>*University of Missouri, Columbia*, <sup>2</sup>*University of Illinois, Urbana*, <sup>3</sup>*Prairie Swine Centre, Saskatoon, Saskatchewan Canada*.

A series of 16 experiments using 703 barrows was conducted to determine if any of the 3 European energy systems is adequate for use under North American conditions, and if a sound energy system must consider animal factors (e.g., protein vs. fat deposition). These experiments were conducted at the University of Illinois, the University of Missouri and the Prairie Swine Centre. Extreme care was taken to assure that similar procedures were used at all 3 locations. In addition, a central laboratory was used by all 3 locations for several analyses in order to minimize variation.

All experiments used the comparative slaughter method to determine NE by measuring the amount of energy retained in the pig carcass during the 28 d (growing) or 35 d (finishing) experiments. Each pig slaughtered was ground multiple times to obtain a representative sample. There were 16 pigs in each initial slaughter group and 8 pigs in each treatment group at each stage of growth. The amount of energy retained during the experimental feeding period was determined by difference. The operational maintenance requirement was estimated by regression of energy retained on energy intake with 4 levels of feed intake at 2 growth stages (approximately 23 to 85 kg) and at the 3 locations. In