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Principle Investigator:

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Overall Program Objectives

- Develop an integrated management scheme to optimize broiler breeder, hatchery, and broiler performance
- Improve the sustainability of the broiler breeder-hatchery-broiler industry
- Define and develop solutions to current and future industry problems

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Improve Broiler Breeder Feeding and Nutrition

- Develop cumulative nutrient targets during rearing that support subsequent reproduction
- Develop feeding programs to control fleshing and frame development
- Optimize dietary amino acid balance
- Improve livability, egg production, fertility, hatchability, and broiler performance

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Improve Collectable Egg Production

- Develop feeding and nutritional programs for females that minimizes breast meat but supports development of proper fat reserves
- Improve mechanical and conventional nest management
- Examine feeder space, floor space, and uniformity issues

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Improve Livability and Health

- Develop improved strategies for heat stress
- Optimize vegetable-based diets
- Utilize larger feed particle size to enhance gut development
- Reduce male aggression through feed management and lighting

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Improve Fertility

- Develop feeding and nutritional programs for males and females
- Develop post-peak body weight and feeding programs
- Develop strategies to best utilize available feed additives
- Improve male spiking strategies

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Improve Hatching Egg Management

- Define optimum storage temperatures
- Define effect of storage time
- Define effect of storage humidity
- Determine how to best use egg turning
- Account for flock age, albumen quality, and strain effects
- Improve sanitation programs

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Improve Hatchability

- Optimize preheating programs
- Determine optimum incubation temperature
- Determine optimum incubation humidity
- Optimize machine air flow
- Optimize room ventilation and temperature control strategies

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Improve Chick Quality

- Reduce egg temperatures during incubation
- Develop improved brooding strategies
- Develop improved ventilation strategies
- Investigate nutritional intervention strategies for the breeder and broiler
- Improve sanitation programs

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Improve Broiler Performance

- Develop feeding programs that allow parents with greatest genetic potential to reproduce
- Better define how breeder management, apart from egg weight and egg composition, affects broiler performance
- Examine factors that make reduced use of medications successful

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Improve Environmental Quality and Industry Sustainability

- Develop strategies to best reduce phosphorus excretion
- Develop strategies to best reduce nitrogen excretion
- Develop strategies to best utilize feed additives and enzymes

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Educational Outreach Program

Assists commercial managers and decision-makers to better understand the complex long-term relationships that arise from broiler genetic selection programs and flow through broiler breeders to the hatchery and on to the broilers.

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Progress Reports, Updates and Interactive Discussions Are Provided Each Spring at the NCSU Broiler Breeder Research Workshop in Raleigh

Next Workshop Is Scheduled For April 1, 2004

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