

Research And Graduate Education

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The Center for Integrated Animal Genomics

Third in a Series on the Presidential Initiatives

The Center for Integrated Animal Genomics (CIAG) brings together over 40 faculty members from three colleges to promote systems-wide approaches in animal agricultural research. Co-directors are Max Rothschild, C. F. Curtiss Distinguished Professor in Agriculture (animal science), and Susan Carpenter, professor of veterinary microbiology and preventive medicine.

The Center's goal is to make Iowa State the premier institution in the world in integrated animal genomics. Scientists at the Center work to identify, map and understand the function and control of genes to improve animal and human health.

"Iowa State has a great climate for cross disciplinary efforts. We are really thankful for the support of the opportunities this Center provides," notes Carpenter.

CIAG embraces basic research areas of animal biology and veterinary medicine that build on current strengths at ISU and are predicted to be of particular importance in agricultural research in the next five to ten years. These areas include Comparative Genomics and Animal-Microbe Interactions.

Faculty research programs integrate bioinformatics and computational biology with animal genetics and infectious diseases to improve animal and human health and production and enhance Iowa economic development in animal biotechnology.

Potential outcomes include:

- Genetic improvement of livestock species
- Development of designer animals for specialized animal products to improve human health
- Improvements in food safety and reduced use of antibiotics

- Development of safe and effective vaccines and anti-microbial agents
- Reduction of possible bioterrorism threats through the food chain
- Increase harmony of animal agriculture with Iowa's natural resources
- Preparation of future scientists for the challenges and opportunities in emerging areas of animal biology
- Economic development of the animal genomics industry in the State of Iowa
- Increased collaborations between Center faculty and scientists from other regional centers

The primary activities of the Center are to foster faculty development and collaborative research. Specific programs include:

- a CIAG Competitive Grants Program that emphasizes interdisciplinary collaborative research;
- CIAG workshops in areas of animal genetics, comparative genomics and animal-microbe interactions; and
- the Genomics Scholar and Fellowship Program to help faculty on campus establish national and international collaborations and research opportunities.

An additional activity of the Center is the preparation of future scientists for the challenges and opportunities in emerging areas of animal agriculture through participation in the Graduate Training Programs.

CIAG faculty members have generated 160 intellectual property disclosures and a total of 37 patents for their inventions have been issued. There are now more than 30 commercial agreements with industry, and to date these have led to the introduction of seven products to the marketplace.

CIAG

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The Center is administered by the College of Agriculture with advice from the Colleges of Veterinary Medicine and Liberal Arts and Sciences. Financial support is provided by the President's Office, College of Agriculture, College of Veterinary Medicine, Office of Biotechnology and the Departments of Animal Science and Veterinary Microbiology and Preventive Medicine.

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