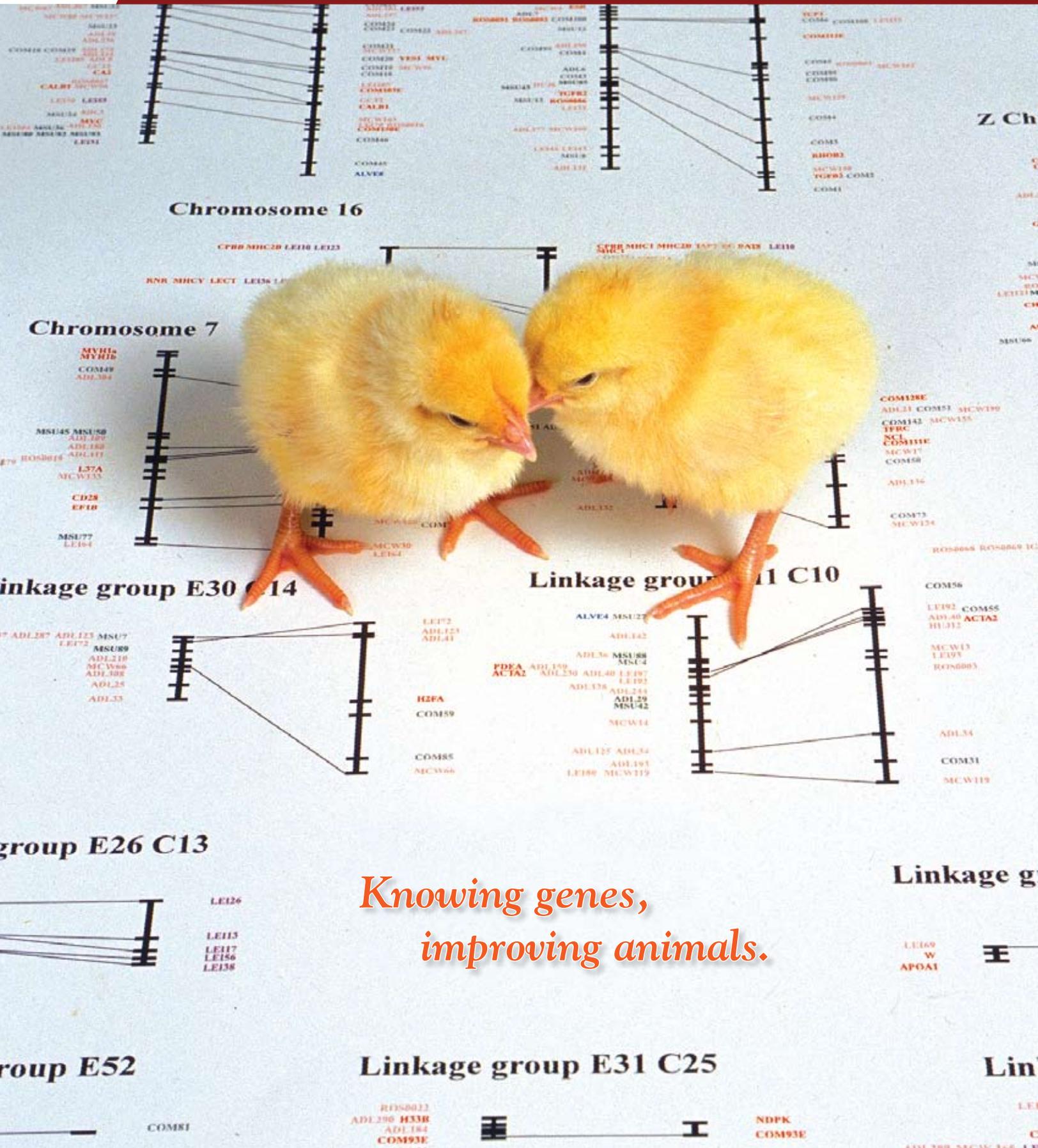


ANIMAL GENETICIST



*Knowing genes,
improving animals.*

ANIMAL GENETICIST

Knowing genes, improving animals.

Animal genetics includes a broad range of activities, specialties, and training. In the basic sciences, animal geneticists try to understand gene functions and how these affect important traits such as growth, reproduction, disease resistance, or behavior. Animal geneticists who map genes take the reverse approach: they observe and measure traits and try to find the genes that cause them. Animal geneticists with more mathematical and computer skills work in bioinformatics, where they analyze and interpret the genetic code or compare the genetic code across species. They relate what they learn about gene location and function in simple life forms such as worms, zebrafish, and fruit flies to more agriculturally relevant animals such as cattle, pigs, chickens, turkeys, sheep, horses, fish, shellfish, or even honey bees. Finally, some animal geneticists work with populations to understand evolution and forces changing our natural populations. If they focus on animal breeding, they may develop new mating strategies for crossbreeding or use marker-assisted selection to improve a wide range of economically important traits.

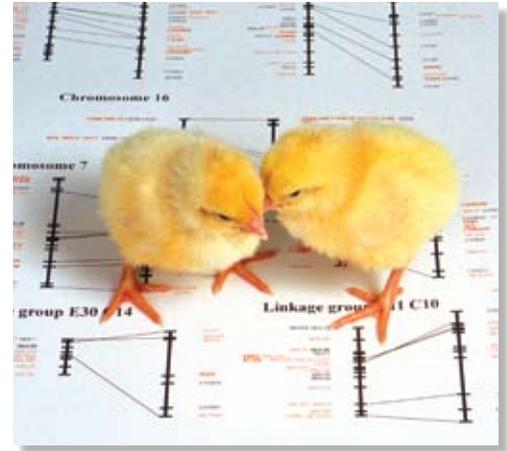


Photo by Peggy Greb.

Animal geneticists may work for animal pharmaceutical companies, breeding companies, breed associations for various commodities, hatcheries, universities, or the federal government. Companies hire geneticists to develop new drugs to combat diseases, develop methods to identify genetically superior animals, design precision mating systems or precision management systems, develop methods that enable parentage and identity verification for traceability, manage our genetic resources, protect wildlife, and ensure sustainability of animal resources. Colleges and universities may hire geneticists for all levels of research, teaching, and outreach. Veterinarians and human health professionals also need genetics training, because they must understand, diagnose, and treat gene-based diseases.

To be an animal geneticist, first earn a bachelor's degree with broad training across the sciences. You might earn a degree in animal sciences, biology, biochemistry, poultry science, dairy science, forestry, entomology, or conservation biology. Then, pursue a master's degree or doctorate in a specialty area. If you're interested in basic research at the gene level, take courses in physiology, biochemistry, and even biophysics. If you're interested in bioinformatics or breeding, take plenty of computer sciences, mathematics, and statistics.

In high school, take as many courses in [math](#), [science](#), [computers](#), and [biology](#) as possible. In addition, you must have good communication skills, so [English composition](#), [writing](#), and [speech](#) are all essential.

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