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## Thinking Outside the Birdcage

Avian-based research is hardly a conventional topic for coverage in a laboratory animal science journal. Indeed, most of us probably have little idea what part birds have played in research over the years, let alone currently. But the best way to learn and progress in research is by innovative thinking, and although the bird may not immediately come to mind as a typical laboratory animal, it is through the exchange of ideas from different disciplines and different species that we allow ourselves to be creative and open the doors to a wealth of new knowledge.

Avian research has assumed many forms. We all take for granted the important early aviation research of Leonardo da Vinci and the Wright brothers, whose studies of bird form and function have enabled us to fly easily from one destination to another. Avian population surveys helped bring the California condor and whooping crane back from the brink of extinction and have provided a practical tool for the study of the dynamics of biodiversity. Irene Pepperberg's innovative studies of cognitive and communicative abilities of parrots have had important implications for teaching language to developmentally delayed children (<http://www.alexfoundation.org>).

The association of birds with zoonotic diseases such as West Nile virus and avian influenza has proven important in the study of emerging infectious diseases. The Centers for Disease Control and Prevention (CDC) uses wild bird population studies to track and conduct surveillance of West Nile virus. The World Health Organization (WHO) uses epidemiological information on avian influenza outbreaks in humans and poultry to develop contingency plans capable for efficient response to an influenza pandemic.

Colonies of research birds exist at many colleges and universities for the furthering of veterinary and biomedical science. Advances in avian medicine enable us to provide better care to birds and, therefore, the ability to perform higher quality research using birds. The article in this issue on the efficacy of anesthetic agents in chickens (*see Wyatt et al.*, p. 36) demonstrates how more research is needed to develop of safe and effective avian techniques. Without the ability to safely anesthetize chickens, we would be unable to use chickens as models for studying reproductive endocrinology and ovarian adenocarcinoma.

This issue also presents two review articles describing important current research using birds. Author Bennu reviews current efforts by a multidisciplinary research group to update the avian tree of life, using changes in DNA sequence to redefine evolutionary relationships among birds (p. 42). Many of their findings have turned traditional assumptions regarding avian taxonomy upside down. Author Harding (p. 28) provides insight into research findings in songbirds that have transformed the field of neuroscience. Behind many of these discoveries—including proof that neurogenesis occurs in the adult brain—is Fernando Nottebohm, of the Rockefeller University in New York City. We also present an interview with Nottebohm on p. 23.

As we work in our laboratories and animal facilities each day, we should take a moment to consider the many other forums where research takes place. I hope this issue stimulates such thought. When we relax our familiar and preconceived notions of research, we enable our creativity. After all, creativity sets us free and provides the opportunity to explore and make new discoveries.

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