

# Evolution in Action



Ellen D. Ketterson

Distinguished Professor, Biology and Gender Studies

## CURRENT RESEARCH

Knowledge and technology help us to understand how animals respond to changing environments

As climate change and habitat alteration proceed at unprecedented rates, studying animal behavior and physiology, especially in relation to environmental change, is important for the conservation of biodiversity, in part because wild animals play vital roles in ecosystems. For example, migratory animals, such as songbirds, may play a critically important role in the spread, transmission, virulence, and evolution of infectious diseases that affect human and animal health. Dr. Ellen Ketterson, Distinguished Professor of Biology and Gender Studies at Indiana University, studies songbirds in the wild to understand animals' responses to environmental change. Along with Dr. Jonathan Atwell and Dr. Adam Fudickar, senior scientists who provide expertise in neuroendocrine techniques and emerging tools in migration biology, Dr. Ketterson's team brings greater knowledge to the organismal and evolutionary mechanisms that underlie behavioral and physiological shifts in response to climate change and urbanization.

Dr. Ketterson's research is a collective effort, capitalizing on emerging technologies in electronics miniaturization, computing, biogeochemistry, genomics, transcriptomics, and informatics, in order to study the interplay between migration, seasonal timing, disease, and climate change, across the continent-wide range of a common backyard songbird, the Dark-eyed Junco. Important subjects in scientific research for nearly a century, juncos are distributed across North America, but from place to place they exhibit stunning variation in feather plumage coloration, migratory behaviors, and seasonal physiology. Because they are common and abundant, yet diverse and widely distributed, juncos provide an ideal study...

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## AFFILIATION



Indiana University Bloomington

## EDUCATION

- Ph.D. in Zoology 1974, Indiana University
- M.A. in Botany 1968, Indiana University
- A.B. in Botany 1966, Indiana University

## AWARDS

- President, American Society of Naturalists, 2015
- Alden Miller Award, Cooper Ornithological Society (career achievement), 2014
- Elected, American Academy of Arts and Sciences (AAAS), 2014
- Guggenheim Fellow, 2004
- Exemplar Award, Animal Behavior Society (career achievement), 2003

## RESEARCH AREAS

Environment, Ecology

## FUNDING REQUEST

Your contributions will support the continued research of Drs. Ketterson, Atwell, and Fudickar, and their team of graduate and undergraduate student researchers at Indiana University as they develop novel technologies and approaches to understand how environmental change will affect bird populations in the future. Donations will help fund the ~\$150K/year required to support personnel, travel, neuroendocrine, biogeochemical, and genomic methodologies, and technology to track animals in nature. Partner with the Ketterson Lab to see how bird migration affects human health, and how urbanization affects bird behaviors!