## William Brewster Memorial Award, 1987

Jerram L. Brown

The behavioral ecology of communal breeding in birds is the focus of long-term studies by many investigators. Jerram L. Brown has been active in this endeavor for the past quarter-century, and has been responsible for a succession of important field studies and theoretical contributions. Two dozen such articles have appeared in the past ten years, culminating in a book published in 1987 as a Princeton Monograph. Brown has consistently provided taxonomically, temporally, and geographically satisfying studies, and he is generally regarded as the leading theoretician of communal breeding.

Brown's career has included several topics in avian biology, most having to do with the evolution of behavior. He was among the first to apply cost-benefit analyses to problems of behavioral ecology.

The clarity of his thinking is especially evident in his synthesis of the role of territorial behavior in population regulation—in fact, "Brown's levels" not only endured but are now part of the jargon of that field.

More recently, Brown has turned primarily to the study of the evolution of communal breeding in birds. His concern in this program has been threefold: he has asked (1) why is breeding delayed in some populations, and what determines the age at first breeding of individuals, (2) why is the dispersal of communally breeding birds delayed or reduced, and (3) why do some individuals help others in breeding?

Brown's most significant advance in this field has been to recognize *direct* and *indirect* components of inclusive fitness and thus also of natural selection. As a consequence, it is now clear that parental and alloparental behavior are not equivalent when subject to selection, although components of such behavior may be ethologically and ecologically identical. This demonstration is a milestone in avian biology and a major part of the achievement by the colleague we honor with the Brewster Memorial Award.