In this talk, I will present our recent work that details biological mediators of life history plasticity. This work is inspired by our broad interest in backwash effects of death on the processes of life. The finite nature of life creates a variety of trade-offs in individuals. We are interested in how these trade-offs reflect in the brain and hormones. I will describe our efforts to use perturbation models to study neuroendocrinology of such tradeoffs. These models include manipulation of host behavior by coevolving parasites and the effects of predator presence on prey physiology. Our diverse approaches are united by the vision of placing the form and function of the neuroendocrine system within a framework of ecology and evolution. I will also use this opportunity to present broad contours of our plans in this context.