Acceptance speech

16 June of 2022

Steward T. A. Pickett, awardee in the Ecology and Conservation Biology category (14th Edition)

I first want to express my deep gratitude to the BBVA Foundation for this amazing award. But I must quickly add my thanks to the award committee, and particularly to all those generous colleagues who wrote in support of my nomination. They are too many to name here, but I thank them all sincerely.

Reaching deeper in time, requires me to acknowledge the ancestors and mentors who launched me on my career: I thank my family for not thinking that science was weird, and for their generations-long commitment to education. Next in line are my junior high science teacher, my two biology teachers, and a third biological mentor in high school. I remember their names and cherish their encouragement these decades on. To Drs. Jerry and Carol Baskin at the University of Kentucky for their kind welcome into their lab, and their guidance toward my first published papers. And thanks to my graduate advisor, the late Fakhri Bazzaz, for his confidence in me and for creating such an amazing community of scholars at the University of Illinois, some of whom are still my best friends. This leads me to acknowledge other communities with which I have been privileged to explore. The two recipients with whom I share this award, Drs. Lenore Fahrig and Simon Levin, are among those who helped lay paths for me. Time prevents me from naming other important colleagues. But I must point to the Cary Institute of Ecosystem studies, a remarkable private, independent research organization, that has given me the time, the place, and the encouragement to integrate both within ecology and well beyond. I can't imagine that I would be here without that intellectual environment. Thanks also to the experts and practitioners outside my own discipline who have welcomed me, and helped me to explore transdisciplinary frontiers.

The scientific path that has led me here spans almost 50 years of conceptual and empirical work. All of this work has been underlain by my concern with the origin, structure, and effects of spatial heterogeneity in ecological systems. The work first focused on the adaptation of plants to spatially and temporally heterogeneous successional environments. That led to my explorations of patch dynamics, a topic in which Levin's theoretical work and

Fahrig's work on connectivity have been important guides. The first practical application of patch dynamics from my (and John Thompson's) pen was on designing nature reserves to account for both spatial and temporal heterogeneity. The prevailing view at the time was of a static or equilibrium context for conservation. The contrary view led to a new, non-equilibrium paradigm of landscape dynamics that was explicitly heterogeneous, probabilistic, and open ended. This proved useful to environmental policy and management. The next step probed the role of human dimensions as part of that new paradigm. I helped establish the urban-rural gradient approach, both to promote a new science of urban ecology in the United States, and to encourage thinking ecologically about urban systems as regional phenomena beyond cities. The urban-rural gradient approach was expanded into a tripartite conception of urban ecology, stimulated by the establishment of the Baltimore Ecosystem Study Long-Term Ecological Research project – ecology IN the city, in which traditional biological ecology is transported to green patches in the urban matrix that are analogous to habitats outside of cities; ecology OF the city, which takes all places in urban regions as their social-ecological objects of study; and finally ecology for or WITH the city, which explicitly works with communities, officials, and policy makers, as well as viewing the city through a lens of environmental justice. This conceptual trajectory intersects with the crisis of climate change in a new collaboration that conceptualizes disturbance and human disaster as increasingly recurrent acute phenomena, linked in series by the legacies of earlier disasters for subsequent ones.

The conceptual work was, of course, in dialog with the empirical work, and as expected, each altered the other. Here I highlight several milestones: Experimental patch dynamics in succession; Long-term research on permanent plots in post-agricultural succession with its critiques of conservation of even old-growth forest; Experiments on heterogeneity as gradients of stress or resources; the first experimental study of forest-field boundaries as multifactor functional zones; comparative data on riparian boundaries between rivers and upland savanna in Kruger National Park, South Africa; New ways to measure urban heterogeneity as co-produced by people and nature; and New case studies for integrating social-ecological processes as urbanization becomes both more regional and more global.

The personal significance of receiving this award is varied. It validates some approaches that in the past have tended to be marginalized in ecology: for example, 1) the commitment to conceptualizing spatial heterogeneity in ecology; 2) the application of spatial heterogeneity to practical concerns, such as design of nature reserves and connectivity, 3) as a bridge concept between ecology and urban design; and 4) a long-term commitment to synthesis.

Relevant to the sociology of science, as an African American, I hope this award reminds upcoming researchers among people of color that they are capable of achieving success and satisfaction at the frontiers of knowledge. Finally, the financial support of the award will assist in continuing my work after retirement, but I will also contribute to professional associations I believe are crucially important.

For all this I am extraordinarily grateful.