

On identifying rising stars in ecology.

Laurance et al. (2013) argue that the primary predictor of a scientist's productivity in the decade following the completion of their doctorate is the number of papers they published prior to completing their degree. Unfortunately, shortcomings in Laurance et al.'s data collection and analyses call into question the generality of this relationship. First, it appears that they failed to control – statistically or in their sampling – for the type of institution where their focal researchers were based. Given differences in obligations and resources, scientists likely have very different relationships between pre- and post-doctoral productivity if they are based at large research universities, smaller colleges focused undergraduates, or government research institutes. Second, they neglected to correct for the fact that not all researchers, even those at the same institution, devote the same proportion of their time to research. For example, at the research-focused University of Florida (an "RU/VH" institution; Carnegie Foundation for the Advancement of Teaching 2013), the proportion of one's Full-time Equivalent (FTE) devoted to research can vary from 10-100%, with the remainder dedicated to teaching, extension, service, or administration. Laurance et al. should have used productivity per research FTE, rather than absolute productivity, as the response variable in their analyses. Finally, Laurance et al. appear to have pooled researchers from different countries in their analyses without including national identity as a factor in their model. The countries alluded to in their methods have vastly different academic cultures, training philosophies, resources, expectations, and incentives for publication. Without explicitly considering the influence of national identity, or at the very least reporting the number of researchers sampled from each country, it is difficult to determine if their results are widely applicable or driven by countries overrepresented in their dataset.

The generality of Laurance et al.'s results ultimately depends on two factors – the composition of the study population and their analyses of its productivity. Without knowing details about the former – including in what countries the scientists were based, the types of institutions employing them, and the structure of their positions – it is challenging to assess the appropriateness of the latter. This is lamentable, especially given the implications of their suggestion to use early productivity as a means of identifying “rising stars” in biology.

Emilio M. Bruna
Department of Wildlife Ecology and Conservation &
Center for Latin American Studies
University of Florida

Postal Address: PO Box 110430, Gainesville, FL 32611-0430
Email: embruna@ufl.edu

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