

Survey highlights barriers to interdisciplinary environmental science

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Efforts to promote interdisciplinary research that addresses complex interactions between humans and their environment have become commonplace in recent years, but success is often elusive. To better understand the obstacles facing natural and social scientists attempting such work, Eric D. Roy of Louisiana State University and seven coauthors from a variety of institutions surveyed researchers at all career stages who were interested and experienced in such research. Roy and his coauthors report their findings in the September issue of *BioScience*.

The 323 [respondents](#), most of them from North America, largely agreed that interdisciplinary research yielded valuable benefits, including the development of new kinds of knowledge. But many said that their efforts to achieve truly integrative interdisciplinary research had been unsuccessful, and had resulted in merely additive research that, although it involved multiple disciplines, preserved the typical separate concerns of each one.

Researchers who responded to the survey most often reported new perspectives and [intellectual stimulation](#) as benefits of interdisciplinary research. But a majority reported experiencing tensions with departments and institutions, and most reported difficulty publishing research results because they did not fit within traditional disciplinary boundaries. Researchers also reported tension with [collaborators](#) arising from their different methods, theories, or approaches, but this was less common than tension with departments and institutions. Communication problems and difficulties with time allocation and funding were

identified as the greatest obstacles to interdisciplinary research.

When Roy and his colleagues asked about institutional support for interdisciplinary research, limits to career advancement and lack of credit for promotion and tenure were the most commonly mentioned barriers. Natural scientists and [social scientists](#) agreed on the nature of the obstacles and thought that institutional barriers were more significant than interpersonal ones. Researchers reported, for example, concerns that they were seen as "spreading out too much."

The results make clear that achieving the goal of working together as a single unit with researchers from different disciplinary backgrounds is often hard to achieve. Roy and his colleagues conclude that "many academic departments and institutions have yet to sufficiently encourage and reward the necessary pragmatic environmental synthesis work" for contemporary environmental questions. They suggest that a balance of disciplinary expertise and integration appears necessary to the perception of success by others, and that increased emphasis on interdisciplinary integration should occur not only in graduate education, but at the undergraduate level, as well. The authors also suggest that challenges be discussed at the outset of a project, and that administrators and faculty recognize that conducting interdisciplinary work will often temporarily slow the rate at which a researcher publishes—although over the long term such work will typically lead to many publications.

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