# Collaboration: Expanding the very model of a modern major scientist

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The traditional seas of scientific practice were once commanded by solitary captains in disciplinary ships. However, the nature of scientific practice has changed significantly in the 21st century. Collaborations now draw singular H.M.S. Pinafores into interdisciplinary armadas armed to address complex, cross-cutting problems in health, energy, agriculture, education and conservation.

So how does an agency, a foundation, a policy maker or an institution judge individual contribution in this rising tide of collaborative efforts? And should existing evaluation tools still in fact be centered on traditional individual reward mechanisms?

Arizona State University scientist James Collins examines how the transformation in scientific practice affects the business of how science is done in his opening talk for the AAAS Symposium "Successful interdisciplinary collaboration: Insights from practice and theory" on Friday, Feb. 17.

"Thinking about the goals of science and how interdisciplinary, collaborative approaches can help to achieve them is an important challenge to the standard independent investigator model of scientific practice," says Collins, who is the Virginia M. Ullman Professor of Natural History and the Environment in ASU's School of Life Sciences. "These talks will address the broader implications of such transformations, not only for scientists but for educators, funding agencies and foundations, science policy makers, and the broader public,

and strategies for increasing the rewards of shared knowledge production."

In addition to Collins, five speakers address the implications of collaborative approaches to scientific study, from the need for organizational restructuring and the sociological underpinnings of interdisciplinary synthesis, to the impacts of differing values and goals and lessons learned through existing cooperative research centers and the "Sea Around Us" project.

Symposium speakers include Collins, Daniel Pauly (University of British Columbia); Irwin Feller (AAAS); Stephanie Pfirman (Barnard College), Michele Lamont (Harvard University), Denis Gray (North Carolina State University). The session was organized by Melanie Roberts and Edward Derrick with AAAS Science and Policy Programs, who is moderator.

"The challenge going forward is creating environments for individuals and institutions that foster interdisciplinary innovation within cultures adapted to reward disciplinary excellence," says Collins. "One outcome of this session would be examples of what makes for successful collaborations and how we might use such things as electronic communication and information resources to tackle the complex problems of the 21st century on a global scale through international, interdisciplinary efforts."

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