

The Value of Interdisciplinary Research Networks

ROBERT ROSE, M.D.

President, Robert M. Rose Consulting

DENIS PRAGER, PH.D.

President, Strategic Consulting Services

In this time of economic hardship, foundations – like us all – are searching for the most creative and productive strategies for getting the most out of constrained budgets. Many foundations that support research, as well as health care delivery, have become aware that in attempting to understand complex issues related to human health, behavior, and well-being, it is often most useful, even necessary, to employ an interdisciplinary approach. This relates to the growing consensus that knowledge of real world problems can rarely be grasped through the lens of a single discipline.

Such knowledge requires the integration of different perspectives, intellectual models, and research strategies, as well as overcoming the tendency for researchers to maintain their disciplinary silos and their distinct approaches to knowledge development. Consequently, “interdisciplinary collaboration has become both a scientific and social imperative” (Kahn and Prager 1994). Interdisciplinary research networks are one of the few opportunities to harness these traditionally separate approaches.

Despite the need for such collaboration, the structures and rewards within universities and other research institutions often discourage active cross-disciplinary work, protecting the boundaries that reinforce intellectual isolation. The impediments to cooperation also extend to funding agencies and review groups that evaluate grant applications, which favor single-discipline, single-investigator projects and foster competition among scientists. These forces have constrained the development of collaborative interdisciplinary strategies, such as networks, but at the same time open an opportunity for foundations to step in and facilitate such important efforts.

Although the intellectual and scientific rationale for such interdisciplinary collaboration has recently been articulated¹, there is little information available on the specific efforts that need to be expended by foundations to establish and support these innovative interdisciplinary endeavors. Brevity of format

limits such discussion in this article. This information, however, has been assembled and the interested reader is referred to the monograph *Finding Answers to Big Questions: Overcoming Disciplinary Boundaries through Research Networks* by Robert Rose, available at www.robertmrose.com.

ESTABLISHING NEW NETWORKS

In searching for prospective network members, one of the most important guiding principles is to look broadly across disciplines. This is often difficult as most researchers or academics are not accustomed to close contact or interchange with others from more disparate fields. Although there are some indications that disciplinary boundaries or “silos” are softening, the general propensity is for finely divided approaches. Much effort is expended in the academy to define differences in models or strategies and to criticize or depreciate those outside one’s own immediate field.

A crucial goal of an interdisciplinary research network is to pose complex and significant research questions and to generate innovative insights for addressing those questions, different intellectual frameworks, and productive evidentiary approaches. In order to facilitate this collaboration, the composition and function of the new network have to overcome the traditional isolation and discomfort in dealing with those outside one’s own field. Often networks must integrate across *levels* from more macro, cultural, and legal perspectives to those focusing on individual behavioral differences; across disparate *approaches* to understanding risk or course of disease; or across the *continuum* from research to practice.

The challenges are great in bringing together, in a truly functional, collaborative manner, scholars and scientists that come from arts and sciences with those from biomedicine or from public health. The success of a network is largely contingent on the members and the chair of the group. Redefining a problem, integrating differing perspectives and coming to

¹ Stokols, D., K.L. Hall, R.P. Moser, et al., eds., “The Science of Team Science- Assessing the Value of Transdisciplinary Research,” *American Journal of Preventive Medicine* 35(2) Supplement 1:A1-A8, S77-S252, August 2008.

agreement on how to best proceed are all difficult, requiring much discussion and patience in learning new languages, approaches, and models. Network members must not only be experts in their own fields, but also demonstrate a capacity to reframe information into one's own model system, requiring curiosity, personal and professional security, and lack of disciplinary defensiveness (described in greater detail in the previously mentioned network monograph).

Establishing successful interdisciplinary networks requires close collaboration between foundation staff and the developing network. As the network begins to take form, both staff and network members are tasked with the responsibility of clarifying the most important questions to be addressed along with identifying best strategies to obtain relevant answers. This evolution of thinking, however, has to develop in the context of what the foundation is most interested in learning and then applying it to future grantmaking. It is an iterative process between the staff and network. The staff should not be too prescriptive in laying out these goals as they have convened the network precisely to obtain new insights or approaches. If these are not in concert with the foundation's greatest concerns or interests and veer too far afield, however, then what ultimately is provided by the network will be a disappointment and not regarded as a wise investment. Thus, the role of staff is to function as facilitators, attentive to the directions in which the network is moving and communicating these back to foundation leadership and vice versa.

NETWORK FOCUS

Over the past two decades The John D. and Catherine T. MacArthur Foundation has sponsored over 20 interdisciplinary research networks. The first networks focused on exploring successful development across the lifespan from infancy to old age, attempting to understand what facilitates adaptation and well-being. These networks integrated social and psychological development in the context of differing challenges in various environments and those brought about by economic forces or shifts in cultural and social expectations.

Recently the foundation has sponsored networks on mental health and the law, adolescent development and juvenile justice, treatment of depression in primary care, economics, mind-body interactions, building resilient regions, early experience and brain development, socioeconomic status and health, and youth mental health care, among others. (More details about these and other networks can be at www.macfound.org under "U.S. Grantmaking, Research Networks.")

Other foundations have also sponsored successful networks, including the Robert Wood Johnson Foundation's Tobacco Etiology Research Network, the Christopher and Dana Reeve Foundation's International Consortium on Spinal Cord Injury, the Lance Armstrong Foundation's LiveStrong Survivorship Center of Excellence, as well as the National Cancer Institute's Transdisciplinary Research on Energetics and Cancer.

TWO SUCCESSFUL MACARTHUR NETWORKS

The Mental Health and the Law Network brought together experts from clinical, developmental, and social psychology with those from sociology, psychiatry, law, mental health administration, as well as national and state policymakers. They found that mental illness alone does not necessarily impair treatment decisionmaking. Risk for violence was more related to a history of substance abuse than mental illness. Those with just mental illness without substance abuse showed no higher levels of violence than the control groups. The network was also successful in developing strategies to impact how the legal system deals more rationally and compassionately with the mentally ill, incorporating the insights that their research demonstrated.

The Network on Adolescent Development and Juvenile Justice incorporated the perspectives of practitioners in social science and the law with other experts in psychology, sociology, and policy. They focused on studies to clarify competence of adolescents and how they differ from adults in their ability to understand the trial process, assist in their own defense, and make decisions about their rights. The network has had considerable success testifying to various legislative groups about younger adolescents' diminished capacity for judgment and their understanding of the consequences of their behavior, which usually improves with their continued growth and development.

Interdisciplinary networks provide a unique way of integrating research and practice that can bridge multiple efforts in a foundation's portfolio. They offer opportunities to develop novel and powerful approaches to problems. They do require careful planning and judicious selection of members, but these are more than compensated for by what they can deliver.

SOURCES

Kahn, R.L., and D.J. Prager, "Interdisciplinary Collaborations Are a Scientific and Social Imperative," *The Scientist* 8(14):12, July 11, 1994.

The authors are former directors of The John D. and Catherine T. MacArthur Foundation's Health Program.

For more information about topics discussed in this article, contact Robert Rose at bob@robertmrose.com or www.robertmrose.com, or Denis Prager at pragerd@att.net or www.foundationimpact.com.

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