PART THREE

The Role of NSF: Program Priorities

I. PRIORITIES

EITM Workshop participants recommended that the Political Science Program at the NSF address the technical divide particularly its nature and sources in compartmentalization, (under)graduate education, and career pressures, in three priority areas: education, knowledge dissemination, and research.

A. Education

To address the skills deficit in formal modeling, empirical modeling, and especially both, support can be provided for graduate training, post-doctoral opportunities, and mid-career re-tooling. Such support can include, but is not limited to, courses in formal and empirical modeling. For graduate students, funding could be provided for an additional year or two of graduate school to complete both formal and empirical modeling sequences. For faculty, support could be given to visit another department on campus or another institution.

Support can also consist of summer training institutes and training centers that are positioned to serve larger numbers of individuals while reaching graduate students and faculty who are in departments that cannot offer this training. These individuals become exposed to more experienced social scientists who combine formal and empirical analysis. The forms of exposure can vary, ranging from a summer (semester) to shorter-term lectures or workshops (one-week).

Support can be directed further to the development and application of short-course instruction templates. An EITM-type module might include the use of interactive teaching devices implemented through the use of various software packages. A number of modules in a variety of mathematical fields now exists and could be provided to faculty and graduate students. In addition, EITM Workshop participants argued that revamping undergraduate training in political science is perhaps the best way to solve the skills deficit.

B. Knowledge Dissemination

The transmission of advances in knowledge and research can be expedited by support for conferences and workshops, and educational and interactive web sites. EITM Workshop participants emphasized that such conferences and workshops should include:

- One problem or theme.
- Representatives from different theoretical (formal and field work) frameworks to explain the problem.
- Empirical modelers to design tests for the formal explanations.
- A large contingent of young scholars.

These conferences and workshops can encourage the comparison of the strengths and weaknesses of different conceptual frameworks, while also introducing people to new types of data and new ways to analyze the problem at hand. Web sites provide additional opportunities for the development and release of "course materials," and modules of conference proceedings, and new software programming techniques.

C. Research

EITM-related research activities can be supported in ways that provide linkages to the infrastructure needs of the social sciences over the next decade. This includes laboratories for experimental research. Shared facilities, for example—funded in infrastructure competitions—allow for formal and empirical studies, and also for pilot studies made with very fast turnaround to the scholars involved and the scholarly community at large.

The funding of laboratory experimental research promises a closer connection between the empirical and corresponding theoretical modeling effort. Unlike previous support, the scale—number of subjects—would be increased 10 times from 10 to 15 up to 100 or 150. This would facilitate richer experiments and also allow for data collection, which can be shared by many investigators, who could not afford such a facility at their own university.

Although the conventional practice of funding original research by individual scholars also continues, it is evident that support must be provided to people who work as part of a research team. In this way, scholars who are well-trained formal modelers can work closely with scholars who are well-trained empirical modelers on a specific research question.

II. INTEGRATION WITH OTHER DISCIPLINES

EITM-type collaborations in education, knowledge dissemination, and research can promote interdisciplinary interactions. For example, although work in economics has been instructive, the economic paradigm of full information and costless transactions is too narrow to be a satisfactory model for political and social behavior. EITM-type opportunities allow for recognition of such promises and problems and, in turn, for construction of explicit, richer models of the individual by developing cognitively realistic (or empirically verifiable) theories. Political scientists who use purposive, goal-seeking, or intentional behavior can make use of the small, but emerging, field of "behavioral economics." This field is empirical, while also employing the insights of psychology and, thereby, playing off the standard neoclassical assumptions. A new behavioral political science can, like behavioral economics, be more realistic and empirically based.

Other disciplines also could combine theoretical and modeling expertise with empirical and experimental expertise.[13] Research groups might include political scientists together with anthropologists, economists, sociologists, experimental psychologists, and computer scientists. Under the umbrella of EITM, truly interdisciplinary research work teams and interdisciplinary research networks can encourage new research orientations for senior members of the profession and expose younger members (graduate students and post-docs) to new ways of thinking that have not yet entered the standard curriculum.

[13]Examples of this type of interdisciplinary approach can be found in Steven Durlauf and H. Peyton Young (eds.), *Social Dynamics*, Washington, D.C. and Cambridge, Massachusetts: Brookings Institution Press and The MIT Press (2001) and, also, in Robert Huckfeldt and John Sprague, *Citizens, Politics, and Social Communication: Information and Influence in an Election Campaign*, New York: Cambridge University Press (1995). In addition, there are various institutions that have either a history of making such interdisciplinary research a central mission or have recently begun along this path. Such institutions include California Institute of Technology and Carnegie-Mellon. There are also non-academic institutions with a similar approach including Rand, The Brookings Institution, and The Santa Fe Institute.