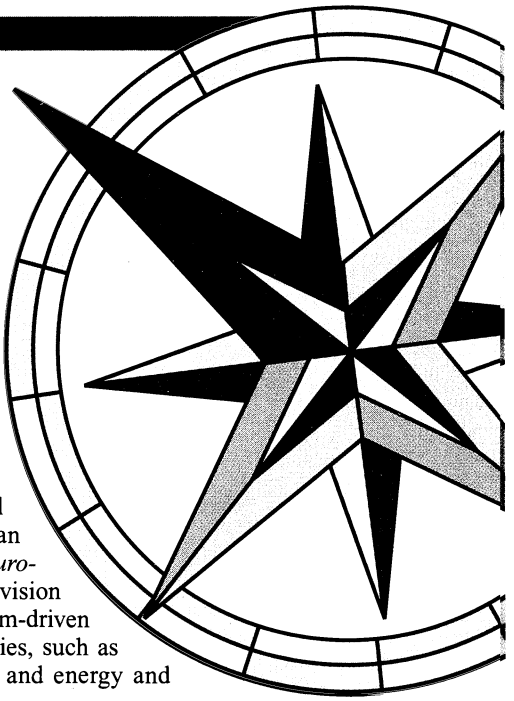

EU-U.S. Research Collaboration

Jorma Routti

The now-classic National Science Foundation book *Science, the Endless Frontier* by Vannevar Bush, published in 1945, portrays science as an exploration of the unknown and an effort to understand ourselves and the world around us. This approach has proved to be highly successful, generating new discoveries that have had major economic and social impacts and truly changed the societies we live in. In 1997, the European Commission (EC) published a book titled *Society, the Endless Frontier–A European Vision of Research and Innovation Policies for the 21st Century*. This vision complements classical science and technology–driven policy with a problem-driven approach by directly addressing the many complex issues facing our societies, such as global change, ecological sustainability, genetically modified organisms, and energy and transportation systems.

It is becoming increasingly obvious that tackling planetwide issues requires extensive international research collaborations and multidisciplinary approaches, as well as the integration of contributions from basic and applied research, the application of new technologies and industrial processes, socioeconomic analyses, and even ethical considerations. It is also important to integrate the results all the way to policy alternatives with estimates of their costs and benefits, impacts and risks. This approach is being adopted in many countries today. But it is particularly important in Europe, where such questions are often complicated by the varying cultural and linguistic traditions of the 15 European Union (EU) member countries of today, and perhaps more than 30 tomorrow.

The landscape of European research and its collaborative aspects is complex. For large-scale facilities, separate organizations have been set up, some of them in collaboration on a global level, such as CERN for particle physics and the European Space Agency for space studies. However, most research is conducted in national programs with national funding. A new initiative—the European Research Area, launched by the EC in January 2000—sets out a strategy for a frontier-free research policy in Europe through improved cooperation between researchers in the member states.

"Research collaboration... benefits all partners..."

About 15 percent of European public research investments are devoted to collaborative efforts, including about 5 percent to the EU research programs. The EU has just launched a new 4-year framework program for research and technological development, with a budget of 15 billion Euros. It has been structured to cover topics in four thematic areas: the life sciences; developing a user-friendly information society; competitive and sustainable growth; and energy, environment, and sustainable development. The majority of funding is devoted to 23 key "actions" that address, in a multidisciplinary manner, areas such as nutrition and health, control of infectious diseases, telecommunication standards and electronic commerce, sustainable transport and mobility, and global change. Such problems require multinational, even global, approaches, and hence they are natural choices for multilateral EU research. As an example of the success of this approach, research on European telecommunication standards, involving industry, the basic research community, and government, has laid the foundation for the worldwide success of the European mobile phone and wireless communication systems, such as Nokia and Vodaphone.

Science collaborations on bilateral levels between the United States and many European countries have long and successful traditions. To complement these bilateral arrangements, the EU and United States signed an agreement on cooperation in science and technology in early 1998 to address questions calling for wide international collaborations. Agreements similar to the EU-U.S. collaboration have also been made with other major countries. Many policy-related topics are being debated, and there are conflicting national and societal interests, such as those regarding genetically modified organisms. But this is merely one more reason why these issues should be studied jointly: to arrive at the best solutions before collisions arise in the trade arena or elsewhere. Research collaboration is clearly a non–zero-sum game: It benefits all partners and contributes to the solution of common, complex, and vitally important challenges.

Jorma Routti is the Director General of Research at the EC in Brussels, Belgium.