nature INDEX 2016 COLLABORATIONS

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Scientific collaborations, particularly international partnerships, produce some of the highest quality research. What's more, the institutions and countries that produce the most high-quality science also tend to form the strongest partnerships.

This edition of the Nature Index highlights some of the most fruitful research collaborations, by measuring each partner's contribution to collaborative papers in the select group of science journals that comprise the index.

The two countries that produce the largest volume of high-quality science publications, the United States and China, also collaborate more than any other international pairing.

Collaborations between the two superpowers manifest in myriad ways. Members of the Harvard China Project, a partnership between Harvard University and several major Chinese universities, are studying how vegetation affects carbon dioxide levels in the atmosphere (page S6). Given that the United States and China are by far the world's biggest CO₂ emitters, their cooperation in understanding and mitigating the effects of global warming is essential.

Across the Atlantic, there has also been a rise in partnerships

between institutions in the UK and the European Union. The strength of these bonds is girded by several factors (page S26), but mostly it boils down to money, free movement and broad collaborations. All of these would be compromised if the United Kingdom leaves the union and isolates itself from the EU funding schemes, agencies and frameworks that have fostered these partnerships.

Close proximity often encourages fruitful research relationships. For instance, Paris and Tokyo are hotspots of local partnerships, with high numbers of intra-city collaborations (page S14).

Among individual researchers, however, location isn't always the main driver for working together (page S20). Rather, factors such as expertise, social networks or a previous interaction can play a more significant role than geographical closeness.

Regardless of the drivers that bring researchers or their institutions together, collaboration is an omnipresent feature of high-quality science. As researchers dive ever deeper into realms of immense complexity, the need for pooling brainpower and resources will only increase.

Nicky Phillips
Editor, Nature Index

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Bill Munger, with Jialin Liu and Archana Dayalu from the Harvard China Project.

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