

# nature INDEX 2015

## COLLABORATIONS

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Welcome to the first of a new style of Nature Index supplements, which further probes the data to answer some searching questions about the role of collaboration in global science.

This supplement starts with the premise that scientific collaborations produce some of the highest quality science. The index, with its core group of selective science journals, is well positioned to glean insights into relationships between institutions and, by extension, between countries.

A novel element in this supplement is a new metric we're calling the collaboration score. This considers only fractional count (FC) or weighted FC (WFC) derived from collaborative work. More explanation of how the collaboration score is calculated can be found in our guide (see page S83).

Although it is researchers rather than countries who work together, aggregating and scaling-up these many collaborations allow us to see national patterns. A full-page graphic showing the interactions of this global network is on page S50.

As the Nature Index grows, the analyses we are able to perform become more illustrative. Weighting the institutions' FC, and applying an attractive force between them based on the strength of their relationships, the institutions start to separate into clusters. How they group reveals patterns in

global collaboration that go beyond the country level — and validate the index as an analytical tool (S58).

One of the key questions we ask of the Nature Index is how international collaborations help those countries still building their scientific infrastructure. Specifically, we look at collaboration patterns across Africa and Central and South America, and ask researchers who have appeared in the Nature Index about the impact of joint projects on their research careers (S60).

The phenomenon of China's continuing rise in scientific publishing is widely known. We take a slightly different perspective on the story, and tease out the role played by international collaborations in this rise (S68). We ask whether location has played an important role in industry-academia collaborations, and look at particular clusters and industry-heavy cities (S76). Many countries have created dedicated institutions to foster collaborations — and we examine the effect of policies in raising institutions' sights (S80). One thing is apparent: with or without state intervention, science is a global endeavour.

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