

## Changing patterns of international scientific collaboration

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The increasing role of international collaboration is one of the most striking changes in the way science is carried out the recent decades. In this study we look at the global pattern of international collaboration measured through co-authorship and analyze trends for the 30-year period 1981 to 2011. Particular focus is directed towards how the extent of international collaboration varies and has developed at the level of countries and fields. Possible explanations for the observed variations are presented. We are also presenting indicators on the citation impact of the internationally co-authored publications. The study is based on the CWTS Web of Science database.

Worldwide, the proportion of international co-authorship has risen from 4.9% in 1981 to 21.4% in 2011. The internationalization trend accelerated around the early 1990s and the recent decade the growth rate has been slightly lower than during the 1990s.

There are, however, major differences at the level of countries with regard to international collaboration. Among largest research nations in the World, Switzerland, Austria, and Belgium rank highest with 62-66 per cent of the publications involving foreign co-authorship in 2011, while China ranks lowest (24%). The growth over the last 30 years has been impressive in most countries, with growth rates typically in the range of 30-40 percentage points.