



Why is Eastern Europe still waiting for a reverse brain drain and how can we increase international scientific collaboration?

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In the 21st century, in most research fields it is increasingly difficult for individual scientists to conduct groundbreaking research without relying on a network of international collaborations. A recent paper by Doria Arrieta and co-authors, published in 2017 in *Science Advances* [1], presents extremely concerning results, showing that when the European Union expanded in the 2000s, it had a negative impact on scientific collaborations between researchers in new member countries and elsewhere. Comparing the decade before and after 2004, the authors show that Western Europe experienced a 36 to 42% increase in the rate of cross-border collaboration, whereas Eastern Europe experienced a much slower growth of only 9%. The difference is attributed to higher levels of emigration among Eastern European countries, which markedly increased following the 2004 enlargement.

Apparently, when many researchers move from east to west, they cease to collaborate with colleagues from their native countries. These countries are waiting for a reverse brain drain. Additionally, many academics and researchers based in Eastern Europe fail to establish solid scientific collaborations with colleagues from research powerhouses despite the existence of European Commission programs such as Erasmus, Marie Curie or Teaming actions. If research collaboration is beneficial and can be the cradle of innovation, what is causing this lag between Eastern and Western Europe?

In this contribution I will further statistically investigate these aspects using as a case study my host institution, Babes-Bolyai University in Cluj-Napoca Romania, an institution ranked the best Romanian university in national metaranking of the Ministry of Education and Research and a constant presence in international rankings such as ARWU/Shanghai Ranking. I will also share my personal experiences as the only Romanian European Research Council (ERC) grantee in geosciences that has chosen to implement the project in my home country and one of the very few (5) other Romanian ERC funding recipients that made the same choice. As an academic that has mentored dozens of students being based throughout my entire career in my home country, I will argue that some of the causes of the slow increase rate in international collaboration, as well as the extremely low reverse brain drain reside in factors such as: the lack of predictability of national funding along with sometimes the lack of trust in the objectivity of the evaluation at national level, the promotion of local or regional journals, the different system for academic recruitment and promotion, and especially the different management of research between Eastern and Western European countries. I will present a few initiatives that my host institution is promoting in order to overcome these obstacles. Also, as a researcher who, despite working constantly in Eastern Europe, has always heavily relied on international collaborations, I will try to promote ideas hopefully able to strengthen scientific collaboration.

References

1. Doria Arrieta, Pammolli, Petersen, *Sci. Adv.* 2017; 3: e1602232