## Benefits of Differences in the U.S.-Russia Scientific Collaboration

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The United States and Russia have long been competitors in science and technology, each developing and promoting extensive science complexes in their quests to attain world leadership status. Nonetheless, both U.S. and Russian officials frequently praise international collaborations, stressing that they should be fostered and studied in order to maximize their benefits and best practices.

In order to determine what factors most benefit individual scientific collaborations in the U.S.-Russian context, we interviewed 26 scientists in the U.S. and Russia who collaborated in the years 1995-2014, a relatively open period in U.S.-Russian relations before the U.S. introduced sanctions against Russia for the annexation of Crimea. In those interviews, we asked the 13 U.S. and 13 Russian scientists to comment on their perceptions of best approaches to working together.

Overall, the respondents pointed to a number of differences in the two systems of organization of science, their financing, and practices. We have revealed that differences, rather than hindering the work, often played a positive role in making these scientific partnerships a success. Further analysis of these findings suggests that differences play a positive and even strengthening role in those cases where both parties go through three-step process: they seek to understand the differences, they appreciate them, and they derive positive experience and new knowledge from these differences.

Most respondents noted complementarity, i.e., differences in fields, methods and even geography, often played a foundational role in choice of partner as well as in choice of topic. Working together, they found they encountered differences in scientific institutions, structures and cultures. Developing an understanding of these differences often helped them to ward off problems in the relationships. Interpersonal factors played an enormous role in overcoming differences, especially personal compatibility, trust, and learning from each other.

At the same time, some differences, especially in funding, were difficult to overcome, though they were not necessarily game changers. Nonetheless, some external differences played a distinctly negative role, particularly the pressure to publish as many as possible articles currently being exerted in the Russian context, as well as current tension in geopolitics between the two countries.