For our collaboration to blossom, we've had to bridge cultural, intellectual, and practical differences. In one of our projects, we have been working to quantify how well cells take up nanoparticles with different coatings. To a materials scientist, spending weeks to prepare hundreds of samples just for cells to eat them can be frustrating. Meanwhile, to a biologist, materials scientists tend to have unrealistic expectations—for example, that cells will efficiently endocytose whatever they are fed, without taking into account the fact that they are living things and thus do not always behave as we would like.

Several other mismatches between our fields cropped up. Materials scientists tend to focus on characterizing the material used in the experiment, while biologists primarily want to investigate how the material affects the cells. Planning biology experiments can be very complex; having to respect the life cycle of the cells or organisms can create challenges when collaborators are not used to working with this type of imposed schedule. Materials scientists are also generally expected to publish papers more quickly than biologists are, and biologists place more emphasis on clinical applications than materials scientists do. These differences can make it difficult to agree about when work is ready for publication.

In the beginning, our progress was slow. We quickly reached high levels of frustration, even despair, despite our initial excitement about the projects we planned to tackle. It didn’t help that we were also at a delicate point in our careers: the stage when most researchers—ourselves included—start searching for tenure-track positions. Investing most of our efforts into a multidisciplinary collaboration that might not work, and would likely not be completed quickly, was a risky strategy for standing out in the crowd.

But then we tried an often overlooked strategy: Share an office! We soon discovered that we both appreciate the uniqueness of the Basque Country. Our science conversations became interlaced with Basque language tips, suggestions of which mountain to climb over a weekend, and, of course, detailed discussions of the local food and drink. We got to know each other better, and talking about science became easier. We could trade quick suggestions and advice. We could also plan our time better, coordinating experiments and maximizing resources. Our science took a new turn, and the secrets of the interface between biology and materials science seemed to be unfolding. Within a month of sharing an office, we were finally making progress in one of our projects, developing a cell culturing substrate that can release cells or tissues in response to a light source.

So there you have it. Working closely with scientists from different backgrounds and listening to their scientific views can deepen your understanding of other fields—and improve your own research. We have never enjoyed our respective fields as much as we do right now, which we have achieved by stepping out of them. We encourage scientists interested in interdisciplinary research to get to know not only the work of colleagues but also the colleagues themselves; a huge field of scientific and personal joy is out there to explore.

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