

By Jeffrey J. McDonnell

Orchestrating a powerful group

As I entered my assistant professor years in the early 1990s and worked to assemble my research team, I considered each candidate individually. I took on students based on grades and test scores, and my relationships with them were one-on-one. I didn't consider their teamwork abilities or soft skills—or the group dynamic as a whole. This approach gave me a somewhat productive lab group as measured by single member outputs, but over many years, I came to appreciate that the collective matters—a lot. Beyond the individual output of the graduate students and postdocs lies a parallel universe of teamwork, peer-to-peer mentoring, and—most important—discovery for the research group as a whole.

I found this quite by accident, 10 years into my faculty appointment, with the arrival of a European postdoc who insisted that the group have daily morning coffee like he had “back home.” This ritual evolved from nonacademic conversations over pastries to daily check-ins about what the group was working on to discussions of new ideas. Over the years, these conversations have been the most satisfying part of my job and have led to some of my group's better papers.

I now think of each group member as a critical puzzle piece for my collective. I assemble teams of individuals with different but complementary scientific backgrounds and play off of the (healthy) tension between them, where they question one another's approaches and perspectives. Research group members will have their own theses, projects, and papers, but one can orchestrate a group dynamic that promotes discussion about where the field should be headed and the best new questions to ask.

The first step toward creating this environment and fostering a powerful research group is building relationships. Regular social activities outside of work can help break down walls and create a team spirit. Weekly lab meetings, morning coffee, group lunches, or Friday after-work beers can engineer serendipity across the entire group, or smaller subgroups that head into new directions with curiosity-driven side projects. The team building also creates a sense of safety, trust, and belonging. In my lab, there are high expectations for unselfish cooperation and maintaining one another's reputations. We adhere to the old adage that if you do not have something nice to say about someone, then say nothing at all. Foibles are tolerated; disagreements are settled quickly.

Lab diversity, be it scientific or cultural, can make build-



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ing community challenging, but that diversity itself can add immense power to the team. Certainly I have found that my most productive groups over the years have been the ones with the greatest gender balance and range of cultural and scientific backgrounds. A group leader can learn to leverage this diversity and draw out ideas from some who may be timid in group discussions. Something as simple as not letting anyone dominate during discussions can help. Inviting a gifted member to throw out an idea and having the group discuss it can also be effective.

Using the powerful group as a way to think is like conducting an orchestra. It involves assembling a varied group of musicians, each with solo skills, and helping them play together, creating a piece I could never accomplish myself or with a single student or postdoc.

I have in no way mastered the powerful research group, which is an evolving and ever-changing thing. New lab members bring in new opportunities and challenges. But one thing I now understand is that as old members fledge, the powerful group extends well beyond the faculty member's home institution. The group becomes a ready-made network for collaboration among lab alumni who go on to develop their own orchestras, repeating the cycle of the powerful research group elsewhere. ■

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