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Permalink

<https://escholarship.org/uc/item/68z3t7qn>

Journal

Nature, 556(7702)

ISSN

0028-0836

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Publication Date

2018-04-01

DOI

10.1038/d41586-018-04923-6

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A lab co-op helps young faculty members to thrive

Linking a lab with others fosters crucial camaraderie, collaboration and productivity, writes Rebecca Heald.

When I started my lab at the University of California, Berkeley, two decades ago, what terrified me most was the thought that I alone was responsible for everything — from formulating successful PhD-thesis projects to picking the right freezer. Fortunately, my stress was mitigated because, within a year, two new assistant professors, Matt Welch and Karsten Weis, were hired and given lab space next to mine. Although we all focused on different areas of cell biology, we shared common interests and values and quickly saw benefits in joining forces. We called our joint groups the Trilab.

Matt, Karsten and I saved space by sharing chemical and microscopy rooms, and saved money by pooling equipment. We even tore down a wall to create a joint lunch room, where members of our groups could socialize and discuss projects. We held joint lab meetings weekly, which provided a greater sense of progress and exposed trainees to a wider range of topics, techniques and expertise than any of our labs could have done on their own. The Trilab arrangement also meant that, as lab heads, we had close colleagues with whom to bounce around ideas, trade grant proposals, provide encouragement and have some fun. (Our annual, department-wide Halloween party has become famous: every year, our lab members squeeze enough limes to make 20 litres of margaritas.) Without any kind of master plan, a nurturing scientific and social environment emerged.

What happened for me serendipitously is something that I urge other faculty members, particularly younger ones, to seek out deliberately.

A tight network of colleagues facilitates collaboration; with that come the courage and capacity to tackle interdisciplinary projects. Early on, Karsten and I realized that our labs had complementary knowledge and the approaches necessary to make real headway in an area dominated by established groups. Thanks to funding from the US National Institutes of Health, and the hard work of many students and postdocs over the 12 years that followed, we were co-corresponding authors on 9 research articles applying new tools we had developed for microscopy and chemical biology. Among other creative approaches, we found a way to mimic chromosomes by coupling a single protein to porous glass beads. This was sufficient to cause the chromosome-transport apparatus — the spindle — to assemble in egg-cell extracts, which revealed surprising mechanisms about how cell division is orchestrated. Our collaboration bolstered both of our tenure cases, and the department celebrated our success without attempting to parse out who deserved what portion of credit.

Emotional support was just as important. Matt and I commiserated in each other's offices over failed funding applications more times than I want to remember. We were each willing to do our share or more to make sure all three labs succeeded. Matt and Karsten, in one instance, applied for a grant to buy a microscope that would benefit all of us.

The biggest challenge is finding the right colleagues with whom to

form the group. Proximity is key. I advise postdocs who want to follow conventional paths in academia to prioritize jobs in departments that are hiring lots of junior faculty members, and to avoid institutions — even prestigious ones — that force assistant professors to compete with each other. That makes everyone in the lab miserable.

Matt, Karsten and I had each previously experienced collaborative environments — Matt at the University of California, San Francisco; me at the European Molecular Biology Laboratory in Heidelberg, Germany; and Karsten at both — which helped us conceive of the Trilab. We were exceedingly fortunate to be at the same career stage at the same place and time. But there are other elements necessary for building a productive lab network. These start in the individual lab.

Even when forming a co-op is impractical, the mindset behind it improves the health of individual labs. A principal investigator should set the right tone by designing projects to be complementary rather than

overlapping or competing, so that lab members take ownership of them and the environment is supportive, not antagonistic. This might slow progress, but it increases motivation. Leaders should also take care to capitalize on the range of experience in the group, and treat lab members with equal respect, no matter what their background or career aspirations. Scientists who help each other to collect, analyse and quantify data increase the rigour of the lab's work as a whole.

Moreover, generosity is contagious. In a large group, not everyone is going to buy in, but good will can become the normal state. Twenty years on, Karsten's lab has moved to Zurich, Switzerland, but the Trilab has become the Tetralab, with two other groups joining me and Matt.

There are ways of networking even when labs are farther apart. One colleague, biophysicist Eva Nogales, started a monthly, ongoing junior-faculty lunch club that spanned biology, chemistry and physics. We have also benefited from mini-retreats; about twice a year, we invite nearby labs with overlapping interests for a snack-filled afternoon of short talks and brainstorming.

Celebrating together is key to making a network strong. In our group, we reward ourselves for a manuscript submission. In my lab, at least, it is a huge, multi-year accomplishment to finish a paper, which more often than not is initially rejected. The long and arduous process of publishing a paper has formally begun! Group support is essential in both good and bad times.

Once the community is set up, it self-propagates. What benefits the larger group also benefits the individual lab, and vice versa. A network of human interactions is central to progress and success. Every researcher should make establishing these support systems a priority. ■

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