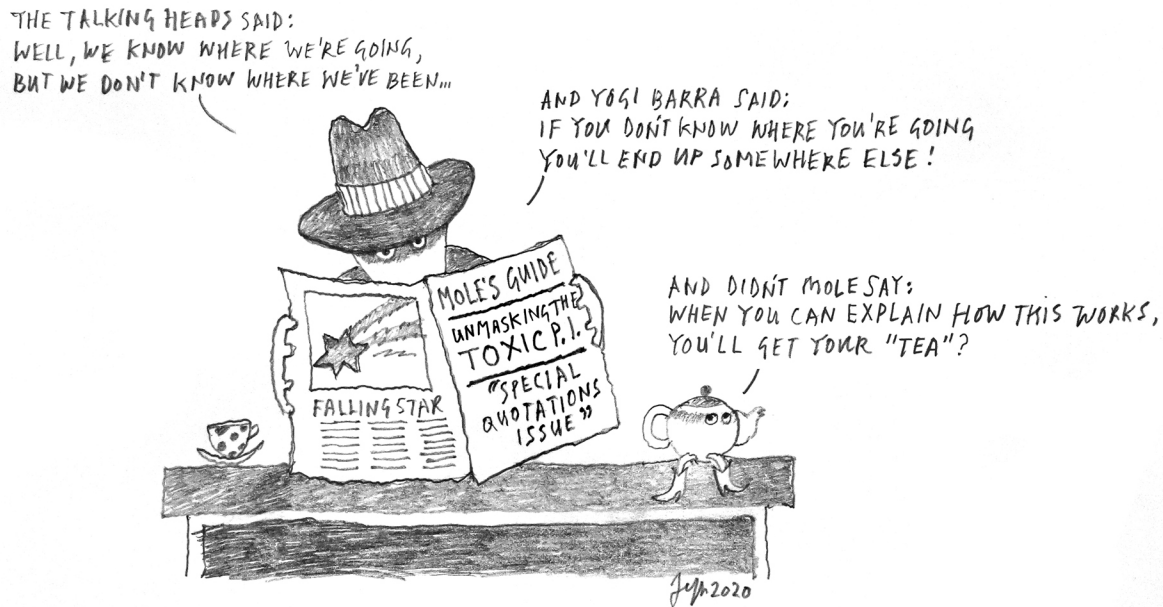


STICKY WICKET

Toxic! III

Mole

Original artwork by Pete Jeffs - www.peterjeffsart.com

Gorgeous day! Hurray! And just when I'm feeling happy, I'm reminded that I am stuck at home and things are just terrible *out there*. But yes, I know we will get through it. Somehow. Not tomorrow or next week, but some day. And when that happens and we get to (finally!) return to our labs, some of us will not be as happy as the rest. Because, sad to say, their lab is toxic.

If you are just joining us, we have been talking about toxic PIs (principal investigators, not private insurance), who they are, what they are, and how to identify them. But I know that some of you are stuck in such a predicament. Your PI is a Shark, a Sloth, or a Fallen Star, and your stomach churns at the thought of going back there every day. What can you do?

Before we get into that, I have to point out some things. PIs who expect you to work hard, to read widely, and to think deeply about your project are not necessarily toxic. This all *might* be your fault. You made a pact, whether you know it or not, to take responsibility for your project. If it isn't working, or if it is working but isn't very exciting or interesting, you share at least some of the blame. Here's the thing: the only way for you to be successful is to be (or become) the world's leading authority on your project, and to master the techniques and approaches that are necessary for its completion. If you aren't doing that to the very best of your ability, then maybe this thing, this biomedical research thing, isn't for you. It is not your PI's job to make your project work. His or her job is to ensure that you have the intellectual and research environment available to you to do what you need to do, to offer advice and suggestions, and hopefully to encourage you to follow a path that might lead to valuable results. A good PI is engaged in all of the research in the lab, aware of results and keeping track of the field, and uses his or her experience to steer things in the right direction. But to quote Albert Einstein, "If we knew what we were doing, it wouldn't be research." Actually,

I don't know that Einstein actually said this, but it is often attributed to him (and it is on a plaque on my office wall). Einstein seems to be one of those people who get things attributed to them that they didn't actually say. Like Yogi Berra (a great baseball player, that's a game that is played on this side of the Atlantic). Yogi Berra did say, "If you don't know where you're going, you'll end up somewhere else." I also know that Wernher von Braun said, "Research is what I'm doing when I don't know what I'm doing." At least I think he did. But he did a lot of bad things despite being a very good rocket scientist. (Tom Lehrer had a song about him. "Once the rockets are up, who cares where they come down? That's not my department", says Wernher von Braun.") What was I talking about? Right! What I am trying to say is, nobody knows how something will work if it has never been tried. Good PIs do the best they can.

When I started as a Molet, my grad school mentor was wonderful; super smart, very successful, and lots of fun. He gave me a project, and I worked hard and got results, and studied the literature (which required reading in an actual library) and designed experiments. But he wasn't excited about my results (which I thought were really cool). He pulled me off that project and set me to doing something else. So again, I worked and read and brought him data, and we published a small paper, but he was not very excited about what I was doing. So, I read a lot more, thought a lot harder, and did an experiment that I hadn't talked to him about (I would have, but he was away at meetings, which happened a lot). When I showed him the results, he asked me a lot of questions about it, including how I thought of it, and looked at me for what seemed like a long time. Then he said (I can still hear him), "When you can explain how this works, you'll get your degree." *That's* a mentor.

So, as I say, if you are not willing, or perhaps able, to be the master of your project, and this is depressing you, consider the option of doing something else for a living. Not everyone can be a research

scientist. And that is *okay*. Many years ago I worked with a student who was very smart (still is) but who simply could not do an experiment. I don't mean he couldn't make it work. I mean he could not get to the point where samples were prepared, things were mixed, gels were run, and results were obtained. After months and months of frustration (on all sides), he left the lab and eventually became a high school biology teacher. It turns out that he was really good at that, and he spent many happy years teaching before retiring. We keep in touch; he's a really nice guy. There are other options.

But let's say that you are perfectly willing to dive deeply into your project, that you work and think hard, read everything you can, and produce interesting results, but have concluded that the PI who runs the lab is, indeed, toxic. If that is the case, it is not just you, but everyone in the lab who feels this way. I have spoken to you (not you, probably, but many of you, plural; it's a problem with English). You are miserable, come to me for help, and beg me not to mention it to your PI. Maybe you have asked to move to my lab (but don't tell my PI). When I explain that it would not be possible for you to work with me without telling your PI (I mean, your PI is going to notice, right?), you decide to stay there. Again, I don't mean *you*, you, I mean some of you. (Vous, sie, vosotros, voi.)

So, one option is to stick it out. This is painful but not disastrous for those of you who have some types of toxic PIs. Sharks and Perfectionists in particular, since it is likely that you will publish and move on, and the experience, while daunting, could well work out for you. Provided, of course, that you yourself do not emulate your mentor. If you do that, it is likely that things will go badly. Here's why. Most Sharks and Perfectionists, indeed most toxic PIs, did not start out that way. They became toxic, well after they had been accepted (often welcomed) into their institutions and departments. Don't start toxic, and don't become toxic yourself. Learn from the experience what you *don't* want to be.

Your next option is to leave. If this is your decision, your only choice is to be *courageous*. First, you will have to talk to your PI. I know that this does not seem possible, but it is necessary. You will need your PI's support in some form. Explain that you are having trouble in the lab, and that you want to try to go elsewhere (this has to be on you, if you are critical of your PI, this will not go well). Obtain the best recommendation your PI can give you. If necessary, talk to your HR department and explain your desire to leave the lab (this may well help, not only with your PI, but also with any bureaucratic difficulties). And then, you will have to start again, and there are no guarantees. That's why it takes courage. You just have to take the plunge and hope that, this time, you will find a lab that you have carefully researched and that is willing to take you on. And if you do this, it is now entirely up to you to be the best scientist you can be. There *are* second chances, but generally no third or fourth ones. If it goes bad again, go back to considering that this might not be, after all, the thing for you.

I know that if you are reading this, and you are not a trainee in a toxic lab, none of this may seem to pertain to you. But it does. You may well have colleagues who are toxic PIs, or friends who are in toxic labs. Or you might be *perceived* as a toxic PI (of course, you aren't). There is a lot of discussion going on among trainees about toxic PIs. Some of it is spot on, and some is by trainees who do not acknowledge or accept the need for them to take responsibility for what they are doing. In some ways it doesn't matter; by knowing about toxic PIs, the damage they do to trainees, and the way their labs are perceived, you can help to ensure that *your* research environment is devoid of any such toxicity.

But it's a beautiful day. As Ferris Bueller said, "The question isn't 'what are we going to do', the question is 'what aren't we going to do?'" At least I *think* he said it. Go do something.