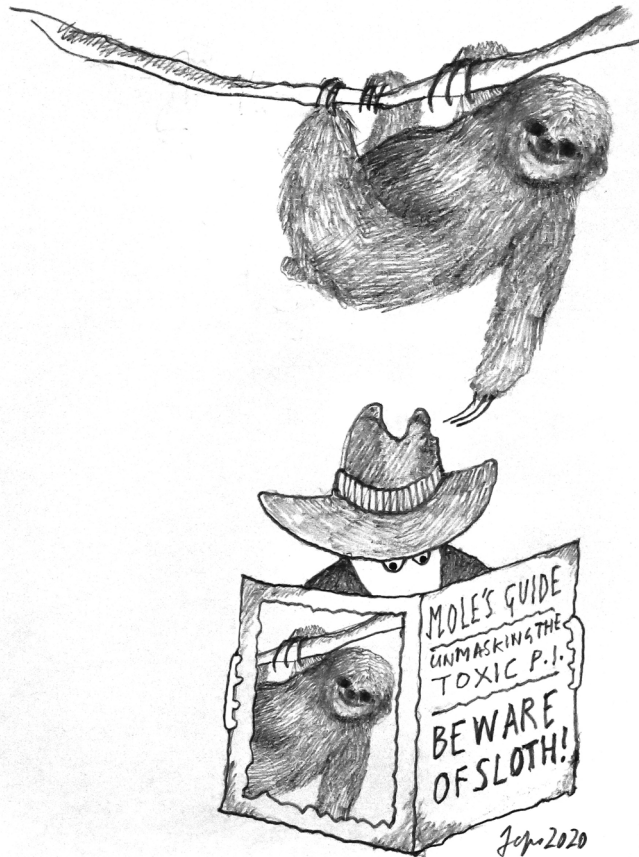


STICKY WICKET

Toxic! II

Mole

Original artwork by Pete Jeffs - www.peterjeffsart.com

What a gloomy, windy day, yet again. Sigh. I miss sitting in the sun. Actually, I miss a lot of things, since I'm sitting at home during our terrible pandemic, getting some fresh air. (I think I'll take a walk if it isn't raining. Mask on, of course. Sigh. I miss seeing faces.) Maybe I'm just depressed, thinking about toxic PIs. Because, if you remember, that's what we've been talking about.

Last time, we started 'Mole's guide to toxic PIs, and how to avoid them.' Sort of a nature guide. Something to take with you while you roam the halls of your favorite academic department, perhaps. Become a toxic-PI watcher. Compete with your friends to see how many you can identify. No, wait, don't do that. I get sarcastic when I'm feeling down. And it *is* depressing to think about toxic PIs (remember, principal, *not private* investigators), and how they harm their trainees. We have already met The Shark and The MOTU, so let's press on. Sigh.

Wait, that was no way to start this! I *did* have that walk, a long one, and the sun came out finally. In fact, it is now a quite lovely day. Life moves pretty fast. If you don't stop and look around once in a while, you could miss it. (Thank you, Ferris, for reminding me.) Okay! So let's get back to our toxic PIs, and what you can do to avoid them!

The Sloth

The Sloth is perhaps the easiest toxic PI to identify. He or she is disengaged and disinterested in the research, and perfunctorily going about it to ride out tenure. Lazy in mind and action, this toxic PI publishes just enough to prevent attention from higher-ups, and too little to benefit the trainees. And remarkably, the Sloth does entice trainees, not with an exciting research program, but promises of easy (if substandard) rewards. Because, in general, sloths work for Sloths. The Sloth can *appear* energetic, even charismatic, but any real passion for the exploration of deep questions has long vanished from the lab. Often the Sloth hides under the pretense of 'translational research.' Don't get me wrong, good translational research is essential to our biomedical research enterprise, and it can be very difficult to do this well (and those who do can be great mentors). But just because the work *might* have translational value is no excuse for lazy thinking, and certainly no excuse for a lack of real interest in the project. To avoid the Sloth, again, survey the trainees. Are they engaged and excited? How often do they meet with their PI? How often does the PI offer insight and guidance? Who has left the lab, and what are they doing now?

The Toxic Entrepreneur

Scientists who are entrepreneurial, who form companies and alliances with companies, often have exciting, forward-facing research programs, and can be wonderful mentors. (I am not one of these, but I have friends who are, like Professor Ferret, who fits this profile well and who has trained many terrific scientists. There is nothing wrong with such mentors.) But I am talking about the toxic form of the Entrepreneur (hence the capitalization, because it is all about capitalization). The Toxic Entrepreneur (TE) is only interested in you and your work if they can see a way to exploit you. That said, it could go both ways; you may well find yourself working in the next company the lab forms, and if this is your goal, you may not mind being exploited at all (indeed, who is exploiting who? Whom?). The TE may only be toxic to trainees who wish to pursue a more academic route to career development. Examine your goals, find out the goals of the PI and the current trainees. But it is also important to know how successful the TE is (and the former trainees are) with regard to the entrepreneurial pursuits, lest you find yourself working for one failing company after another.

The Good Doctor

As is true of entrepreneurs, it is also the case that many scientists who are engaged in translational research run vibrant, exciting programs and are wonderful mentors. And, of course, translation of discoveries to the clinic is of tremendous importance. But it can also be the case that a focus on translation with no interest in learning why something does not work, or how something can work *better*, can produce a toxic environment for trainees. The Good Doctor has rarely, if ever, trained a successful scientist, except in those remarkable (and rare) cases that the trainee actually needed no training. Watch out for trainees who emphatically state that, “our lab isn’t interested in the biology, we are only interested in results.” We’ll see how well that works out for them. But you should consider staying away.

The Fallen Star

Good scientists usually have to reinvent themselves every few years or so. Fields mature, questions are answered, and what might have been an explosive area of research at one time may become incremental. The Fallen Star (FS) made an exciting discovery, perhaps several, and helped to advance a popular field of research to the benefit of the community (and to his or her career). That was then, and now the questions are more mundane, but the FS has not adjusted to the changing times, and is frustrated that a finding that would once

have evoked accolades is now met with a yawn. The FS doggedly employs the same approaches with diminishing returns. That said, the FS is not necessarily toxic, and can be a great mentor and colleague. But if the FS rails against the community for losing interest, if he or she takes out their frustrations on the trainees, this can create a toxic environment where everyone in the lab feels unappreciated, and there is an ‘us versus them’ mentality. The lab of the FS feels that others are simply not intelligent enough to recognize great work, and grumble at the world at large.

The Santa

Everyone loves the Santa, and why not? The Santa is ebullient, handing out compliments and accolades to those in and outside the lab. The Santa is generous, gregarious, and often bigger than life. And most Santas are fun to be around, and are wonderful colleagues and mentors. There is no toxicity here, unless there is: beware the Santa who cheers accomplishments without critique, who applauds without question, and who repeats without understanding. There are Santas who have gotten by on personality, but have limited (or no) actual interest in the science, preferring the social aspects to actual hard work. By all means, join a Santa lab if the existing trainees receive guidance and constructive criticism, but avoid Santa when this is clearly missing. You might have fun, until the time comes to get something done.

The Perfectionist

Perhaps the most difficult toxic PI to identify is the Perfectionist. The Perfectionist demands precision and accuracy, has little patience with fools, and produces outstanding research. The laboratory is known as a difficult place, but the rewards might justify the trials. Some Perfectionists are fantastic mentors, and those that leave the lab have standards that can propel their own careers. But there are other Perfectionists who are toxic. Be wary. A toxic Perfectionist lab is one where no work from other labs is considered worthy of respect, where those outside the lab avoid interaction, and where paranoia rules. Avoid a lab where no one can discuss their research until published, where work is done in secret, and where trainees disparage others’ success. Or decide that it is worth it to you. Like the Shark, who we met last time, this is a tough one. Take care. Remember, I told you so.

Now that we can identify toxic PIs, and know a few ways to avoid them, we need to talk about what you can do if you find yourself in such a lab. But that’s for next time. Right now, I’m going to enjoy the day. I don’t want to miss it!