1. In Terms of Tenure Criteria

As a new faculty member, I find it very clear what the senior faculty in my department think I should be doing with my time: the activities necessary to earn tenure. And if something doesn’t contribute to earning tenure, I shouldn’t be doing it. We have tenure criteria that are much more clear and explicit than many departments seem to have. In many respects, this is very positive. I know exactly what activities I am supposed to spend my time on, and I always have a clear notion of where I stand with respect to the tenure criteria. The limitation is that there may be worthwhile activities that are not covered by any of the criteria or their components, and it becomes difficult to justify engaging in these other activities.

We have three required research criteria: a record of original published research, a positive independent assessment by external reviewers, and the demonstrated ability to sustain a high quality research program. There are two required teaching and educational activities: effective formal classroom teaching, and effective involvement in graduate research training. These criteria are further refined in annual review documents that identify specific activities that contribute to meeting the research and teaching criteria, with potential point values for each activity, leading to an annual evaluation score. This is set up so that there are a total of 60 points possible each year for research activities, and 20 points for teaching activities.

None of the specified activities involve research ethics, or research ethics training. It is merely assumed that research will be conducted in accordance with normal ethical standards. One might think that there is some provision in the teaching criteria for activities related to research ethics training, but this is neither explicit, nor implicit. The measures by which effective involvement in graduate research training are evaluated
include: recruitment of outstanding graduate students, success in completion of graduate degrees by students, and success of students in their next endeavor, and service on student research committees. These are all measures that have unambiguously measurable outcomes. Of these, only the two measures of student success could reasonably be inferred to have a research ethics training component. However, this is true only in the sense that a serious ethical breach, if it became public, could derail a student’s successful degree completion or ability to move on to their next endeavor. Thus, the faculty member’s success in terms of the relationship of research ethics to these measures of effective involvement in graduate research training is more likely due to luck than any thoughtful and organized ethics training.

I say that this is more likely due to luck, because we have few resources available to faculty that will support them in training their students in research ethics, and little incentive to seek them out. This makes research ethics education a particular challenge for faculty without an explicit research ethics background, and they may be only vaguely aware that the challenge exists. The prevailing attitude is that an understanding of ethical standards will be acquired osmotically, or because we scientists hold these ethical standards to be self-evident. Structured research ethics training, where a specific block of time is set aside for ethics training activities, seems uncommon, and certainly does not seem to be tracked in any systematic way by my colleagues. It occurs in response to formal (Federal) requirements, and is primarily online quizzes associated with obtaining approval for animal- and human-subjects research. Perhaps plant biologists are automatically ethical. I doubt any of my colleagues have ever sat down with their labs and discussed research ethics in terms of fundamental principles and applications. At most, I expect faculty discuss with students the practical aspects of IRB and IACUC processes, mention research misconduct, and possibly address issues in peer review as opportunities for student participation arise.

2. **In Terms of Collegiality**

Many of my colleagues know that I have an active interest in research ethics, and some sort of relevant background, though they may not be aware of what my background is. The most visible element of that background is a set of research ethics training cases that Kevin Geedey and I published over ten issues of *Frontiers in Ecology and the Environment*, a
This has meant that I am a sought-after participant in various projects, where people think that having a participant with ethics credentials might be useful.

In my position as a junior faculty member, my status as the department’s only faculty member with a publication record in research ethics has been a mixed blessing. On the positive side, I am asked to participate in various projects, and I have ended up interacting with colleagues I otherwise would have had little contact. In particular, I have been involved in a number of federal training proposals, in which I wrote a section on research ethics training (and, presumably, would be in charge of implementing that training if the program were funded). However, I have gotten the distinct impression that the motivation is that having a research ethics component to these proposals would look good to reviewers, especially if my biosketch is part of the package. The motivation has not come from the starting point that formal activities directed at research training are an essential component in training novice scientists. In other words, the desire to have me involved in a project is a response to top-down requirements or marketing concerns, not from bottom-up needs or actual concerns about how students come to learn the standards of research ethics.

On the negative side, the things I am asked to do are an awkward fit for our tenure criteria, and they could be time-consuming. For example, every summer I have given case-based guest presentations on research ethics in our various undergraduate research programs and these are generally well-received by the participants and by the faculty who organize the programs. But this does not fit obviously anywhere in our criteria for tenure, and where it could be argued to fit, it has no particular effect on me since I already “max-out” the points for those sections. Therefore, the rational thing for me to do is to cut back on research ethics related activities, and apportion that time to activities for the sections of our criteria where I have not maxed out the points. I’m not that rational. Recently, I agreed to do something similar for a course in research proposal writing that our graduate students take in preparation for their comprehensive exams. There is no mechanism by which I will receive any “credit” for doing so, but the balance of personal cost (in time) to collective benefit (to our new graduate students) weighs in favor of doing so.

However, I did decline to develop and teach a formal research ethics course. The request to do so came in association with a particular grant
proposal that would have provided a month’s summer salary to teach a
new research ethics course for undergraduates (no such course exists
where I am, for undergrads or graduate students). I declined, though,
because this would have meant teaching an “extra” course—there was
just no realistic expectation that this could be swapped for part of my
regular teaching duties, or, if it could, that it would be viewed as a wise
decision to do the swap. Here, the message from the senior faculty in my
department was clear: do not even think about doing this. Similarly, a
graduate training proposal I’m involved in includes four workshop
modules on research ethics. These incur no direct financial costs, so a
few faculty have expressed an interest in having me run the workshops
whether the training grant is funded or not. Of course, I’m not going to
do that.

While it is true that my semi-formal research ethics training
activities do not contribute directly to meeting our tenure criteria, I
am also well aware that they are (generally) viewed positively by my
senior colleagues—particularly at the above-the-department levels—and
contribute to my sense that I am well-regarded as a faculty member.
Thus, there may be a benefit to these activities that has an intangible
influence on my eventual tenure bid, because it contributes to a positive
predisposition towards me. Such intangible perceptions might hold
greater weight if we had a more typically vague set of tenure criteria, but
even in our relatively explicit structure, there is enough subjectivity that I
expect that there will be some variation in how the faculty who eventually
vote on my tenure will ultimately assess my success. Whether any positive
intangibles from research ethics activities outweigh any shortcomings on
our formal criteria remains to be seen (not that I intend to have any
formal shortcomings). Ask me again in 2013.

3. AS AN ADVISOR

Finally, I want to discuss how research ethics training has been
handled in my lab. Despite a dozen years or so of involvement in research
ethics activities, starting as a graduate student with the GREE program, it
is only once I became a faculty member that I was formally responsible
for anyone’s research training, including their training in research ethics.
And given that I take the research ethics training component seriously,
you might expect that I have some organized relevant training for my lab.
But I don’t. The dominant mechanism of research training in my lab is
the frequently-relied-upon osmosis, with the occasional discussion of a
research ethics case. But perhaps osmosis operates a bit differently in my lab than most. After all, the osmotic process depends on osmotic pressure, which is probably fairly high in my lab.

From the outset, prospective graduate students find out that I'm a bit different from other faculty. Rather than simply trying to convince the best students to join my lab, I discuss with each prospective student factors to consider in finding an advisor that is a good match to the student. During the discussion, I explain how I personally view the student-advisor relationship, and provide the student with some written materials on that relationship—including things like the *Lab of Last Resorts* (which actually strikes me as a pretty good lab to be in; Weil & Arzbaecher 1997) and a couple of classic essays on the matter by evolutionary ecologists (Stearns 1987; Huey 1987). In other words, I am not simply trying to sell them on the fascinating research we do, but also on the type of relationship we are likely to have (which some may consider more of a warning than a sales pitch).

As I mentioned, we have occasional formal discussions of research ethics as a part of lab meetings. Lab meetings are weekly meetings where everyone involved in my lab meets and one person presents a status report of their work. Now and then, there’s a gap, and a research ethics case is good filler that keeps the regularity of the meeting. It’s also easy for me to do with no preparation, so in this case is a good use of my time. This strikes me as somewhere between an organized research ethics training (since it's usually unplanned) and osmosis. More frequently, one of my students will raise a question in the course of normal chatting in the lab, triggering a discussion of some ethics topic. This is osmosis, and probably works differently in my lab due to my background. I can raise more “have you thought about this?” type questions, steering people to indirect considerations that may not be obvious until they are pointed out. Similarly, when students first engage in some aspect of academic science, it's habitual for me to outline the ethical obligations that activity entails as a part of my advice on how to do whatever it is effectively.

I often hear people use osmosis as a metaphor in discussions of research ethics training, usually disapprovingly. But let's consider what the metaphor really is. First, it isn't that great a metaphor, since it implies loss on one side. But if we accept that flow occurs only via duplication (i.e., that I'm not losing any understanding by passing it on), it is useful in that the osmosis metaphor evokes the idea that research ethics education is gradual, informal, unplanned, and passive. (Viral transmission is probably a better metaphor for the process, but even in the days of viral
videos, it has some pretty negative connotations.) On the plus side, the osmosis metaphor suggests a way to exploit the process, diminishing the need for formalized research ethics education that seems to interfere with the real tasks of students’ research. Consider ethics osmosis in a lab with high osmotic pressure. The stronger the osmotic pressure, i.e., the stronger the research leader’s knowledge of and formal experience with research ethics, the greater to the flow across the training boundary. Helpfully, having experience in thinking formally about research ethics, I have a lexicon I can turn to (e.g., stakeholders, competing values), a somewhat formalized notion of alternate models of morality and their practical consequences in research, and a process for working out the application of best practices (e.g., by identifying indirect stakeholders and the obligations we do/do not have to them). In a sense, these are tools for transport across the training boundary. It is hard to say to what extent this differs from a lab where the PI has no formal training, but knows the basic elements of conducting research with integrity. Perhaps one goal of the scientific community should be to ensure that PIs have the tools and channels for active transport, rather than relying simply on a diffusion-based model.

I don’t know whether my students encounter some formal elements of research ethics education in courses, or through research compliance requirements, but I suspect my students would tell me about them since they are aware of my interest. I think that PIs are now required to check a box during the proposal submission process stating that we will require any graduate student funded off of the project to get certified in research ethics through the CITI modules [https://www.citiprogram.org], and this is how NSF and NIH requirements are intended to be met. I believe this will eventually have a positive effect, as it permeates a wider range of labs. However, there is no requirement for PIs to complete the course as far as I can tell, and it is we who are in the strongest position to foster research integrity in our labs. The CITI modules we have online access to are reasonably good (but organized by field, and, as usual, ignore the environmental sciences). I don’t know how seriously anyone takes them. It took me 34 minutes to take the quizzes, and I skipped reading all of the material, watching any of the videos, and doing any of the training activities. The material seemed solid, and appropriate for a beginner, but herein lies the trap: for someone without my background, going through all the parts of the training will probably take three-six hours of time. In the big picture, this seems very reasonable. But within a day, it’s quite a
chunk of time. And who has a day to block out from the real demands of graduate school?

REFERENCES


