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## It's in our interests not to be in conflict—of interest, that is

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NATURE'S TRUTHS ARE FREQUENTLY difficult to discern, and they may run counter to preconceived notions. They may also be inconvenient, or even culturally offensive; think of the discovery that the earth revolves around the sun. Nevertheless, nature's truths are immutable, whereas society's conventions are not. Accordingly, scientists are expected to put convention aside as they weigh, in a completely objective manner, the evidence for or against a particular conclusion. This is not always easy. Furthermore, scientists are human, and as such are potentially at the mercy of all those nonimpartial inclinations that genes and environment have bestowed upon them. Keeping these inclinations at bay is critical because society expects the scientific community to deliver valid wisdom that can be relied upon to create a better world. Society as a whole also foots the bill for much of the current scientific endeavor, yet it does not, for the most part, have the expertise or time for independent fact checking. The alliance between the scientific community and society is thus built on trust. This trust must be protected at all costs because without it the entire research establishment disintegrates, to everyone's detriment. It is thus our responsibility as scientists not only to be impartial and objective in our work but also to make it publicly clear that this is how we behave.

For the same reasons, impartiality and objectivity must also characterize the work that is published in *Journal of Applied Physiology*, and this is achieved by making sure that potential conflict of interest (COI) is declared for all authors of a submitted manuscript and for the process by which the manuscript is reviewed. COI cannot be avoided, but it can and must be managed. Author COI is commonly managed by having the authors state their potential conflicts at the time of submission. It is important to understand that the bar in this regard is set not by what an author might genuinely feel constitutes a conflict, based on a detailed understanding of their own situation, but rather by what might reasonably *appear* to be a conflict to the outside observer. Generally speaking, any association that has the potential to earn an author either financial or in-kind benefits as a result of the reported work, even if only a vague future possibility, should be declared as a COI. This includes such things as membership on relevant company boards, receipt of any kind of compensation from or ownership in or consulting for a relevant company, industry research funding, and patents related to the field to which the work contributes. It also includes arrangements where the direct beneficiary is the researcher's department, rather than the researcher herself. This is because the department is then likely to reward the researcher (by financial and/or nonfinancial means such as extra space or relief from other duties) for his role in bringing in the funding.

Universal definitions of what constitutes COI are difficult to prescribe, but most institutions maintain their own sets of guidelines based on currently accepted opinion. Those for *Journal of Applied Physiology* can be found at <http://www.the-aps.org/mm/Publications/Info-For-Authors/Ethical-Policies>. When in doubt, an appropriate rule of thumb is to err on the side of caution (e.g., could anything possibly be construed in an unfavorable light by a local newspaper?). Once COI is declared, it becomes the responsibility of the editorial office to decide if a conflict is problematic. The important thing is to declare things up front. This is definitely NOT an area in which it is easier to ask for forgiveness than permission.

Conflict of interest can also easily arise for editors and reviewers when they are called upon to adjudicate on a manuscript that impinges upon their own area of research, as is usually the case. Publishing research work is part of the livelihood of a professional scientist, both in terms of money and prestige, so it is natural to see competitors as enemies and collaborators as allies. There is no way of getting around this entirely, because quality control in scientific research relies on critical review by expert peers, and these are the very people most likely to be conflicted. There are, however, some COI situations that are obvious and must be avoided. Recent prior associations with an author, such as coauthorship on a manuscript or coinvestigator status on a grant, should be grounds for editors or reviewers to recuse themselves from the review process. What exactly constitutes "recent" in this regard is open to debate, but 5 years is probably a reasonable guideline in most cases; a longer duration may be required for highly formative relationships. Similarly, sentiments of loathing and/or contempt for an author also challenge objectivity and thus should be cause for editors or reviewers to consider recusing themselves.

Authors have a role to play here, too, because they are given the opportunity at submission time to suggest an Associate Editor to handle their manuscript, as well as up to four individuals to act as reviewers, and the above considerations apply to these choices as well. In particular, authors must avoid suggesting colleagues with whom they collaborate/publish, have studied under or mentored, or with whom they have a material financial relationship through patents or other ventures. The 5-yr rule is a guide here too, provided, of course, that the individuals involved can truly consider themselves to be at arm's length after this period of time. Authors must understand that journal editors cannot know all of the potential author/editor/reviewer relationships, even in their own specific scientific community, and so must rely on author honesty. They must also understand that editors take this very seriously.

Again, there are no absolutes. Indeed, like all matters ethical, the definition of COI reflects the mores of society and thus is

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in constant flux. Bottom line: when in doubt, declare or at least ask. As scientists, we can only aspire to be perfectly impartial stewards of the truth, but it is definitely in the interests of all that we not be viewed askance. As researchers, we bear a heavy burden in the name of integrity on behalf of the public. Avoiding, declaring, and managing COI goes a long way to lightening that load for us all.

**DISCLOSURES**

No conflicts of interest, financial or otherwise, are declared by the author(s).

**AUTHOR CONTRIBUTIONS**

J.H.B. and P.D.W. conception and design of research; J.H.B. drafted manuscript; J.H.B. and P.D.W. edited and revised manuscript; J.H.B. and P.D.W. approved final version of manuscript.

