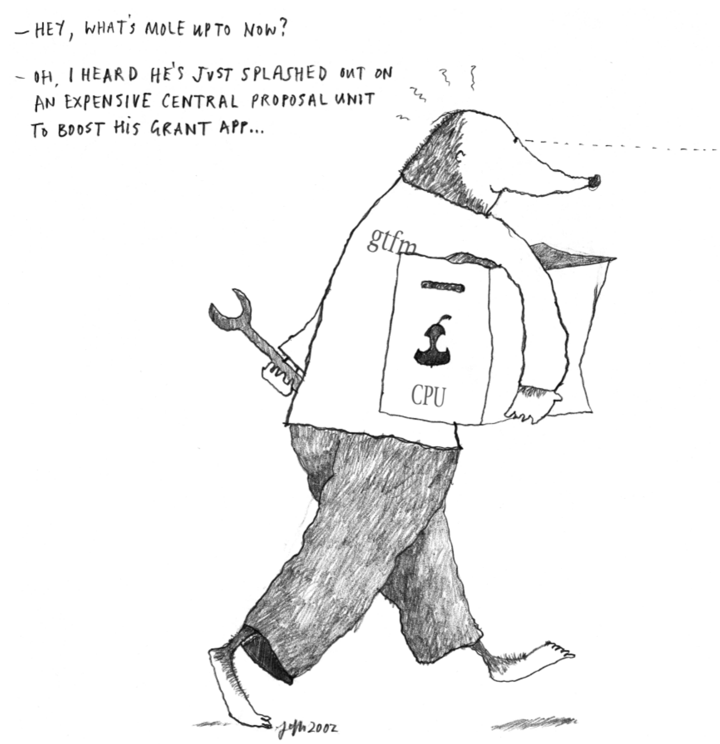
An occasional column, in which Caveman and other troglodytes involved in cell science emerge to share their views on various aspects of life-science research. Messages for Mole can be left at **mole@biologists.com**.
Any correspondence may be published in forthcoming issues.



Bleeding on paper II (a continuation of Mole's guide to grant writing)

Tenacious, aren't you? Good, that's the first thing you have to be if you really are, in fact, going to write grants. The best grant you can possibly write will most likely come back annihilated, or worse, praised but unfunded. So that's rule number one: if you're going to write a grant, brace yourself for devastating disappointment. Rule number two is this: are you sure you want to do this (see rule number one)?

Okay, okay, I'll get to it – really. Here are my top-secret best methods for writing a grant. It will take very little space on my part to write the procedure, and endless hours on yours – a bit like those instructions for an easy-to-assemble barbecue.

First of all, you need a central idea – something that everyone can pretty much agree is probably true, but that leads obviously to some interesting questions. 'The central hypothesis of my proposal is that grass is green.' Why is it green? How did it get that way? How many other colors for grass would be as effective? (Oh shut up you nerdy scientist-types who are already starting to answer these questions: it's an *example.*) The point is, we all agree that grass is green and, if a reviewer doesn't, then the grant is probably cooked (that's a bad thing for those of you who don't speak American). So the central idea has to be something we agree on. Hopefully something more perky than 'grass is green'.

Next, we ask the questions. These will be the aims of the grant. They should be nice, interesting and focused questions, and they have to have potential answers. Three is generally good. The questions have to be things that lead to lots of little questions, each of which you will carefully explore in your proposal. Your only job is to make sure that they're interesting. If you're not sure, ask people. Not only is this a great way to find out, but it's a fantastic ice-breaker ('Excuse me, I'm writing a grant and you look like a very intelligent person' ranks second only to 'Hi, what a beautiful dog, can I pet him?').

Now, you propose a bunch of experiments to answer each and every question, definitively and inevitably. If the possible answer is 'well, we just don't know', then that's perfectly valid, but kiss the money goodbye. If the possible answer is ‘well, that’s interesting, and what we do with the information will depend entirely on what the answer actually is’, that’s also reasonable, but again, bye-bye. So don’t touch anything that smacks of hunting, fishing, searching around, looking or seeking – unless (and this is the key, as you’ll see), *you’ve already done it and it works*. Now fish to your heart’s content, because dinner is already in the frying pan.

I hear this all the time, and I can hear you saying it too. It’s not fair! How in the world am I supposed to write a proposal to do work that I’ve already done? Outrageous! But that’s exactly what you are going to do (in a way). And before we go into that, lets see why. In order to do that, we have to teleport you into the body of a grant reviewer. I know that sounds horrible – I mean, if we really could do that, you’d much prefer the body of an exceptionally fit action hero, but take what you can get. Ready? Here we go. Cue sound effects, followed by the dulcet tones of the inner thoughts of the grant reviewer… ‘Hmmmm. Have to decide between these two very nice grants – too bad we only have money for one of them… lets see… this one proposes very interesting experiments that probably won’t work, but what’s this? There are already preliminary experiments that show that they do? Wow! Triple wow! Okay, and here’s the grant where the applicant says “no way am I going to even try this until you give me the money, and even then I might not try it” …hmmmm. Hard choice. I wonder if I still have that piece of chicken in the fridge.’

So that’s really the last thing. Every chance you get, show that the thing you want to do is do-able. It doesn’t have to be perfect or repeated ten times (*that’s* why you need the money), but you can show three crucially important things, all of which help you GTFM (see Bleeding on paper part I for what this abbreviation means – basically it’s ‘obtain the necessary funds’, but funnier). The three crucially important things are these: (1) the experiments can possibly work; (2) you know how to do the experiments; and (3) you might actually do them, since you’ve already got them working. These three things are the heart and soul of the experimental plan, because scientists, including the super-fit action hero who is reviewing your grant, are all data-junkies. As a reviewer, I would rather see one really interesting and convincing piece of data than all the methodological details in the world. In fact, don’t waste one drop of blood on methods, except to tell me how the preliminary experiment was actually done. If it’s a method you haven’t published on, get a collaborator who has and show me they can do it (and are willing to).

Finally, put everything in order. Aim 1 has to be data heavy – guaranteed to be published in the next year or so, and sure fire, solid stuff. Aim 2 should follow on from Aim 1 and have some support. But you don’t need as much – something to keep you busy when you’re writing up the results for the first paper and can’t write any more. And then delicious Aim 3, which probably won’t work, but there’s some really tantalizing data here to suggest that it will, and indicate that you’ve got lots of ideas of what to do if it doesn’t. Write everything clearly and keep reminding the reviewer of why you think this is a good experimental question. Keep in mind that they are probably watching TV while reading your proposal.

I’ve got chills. If I had my wallet with me I’d be counting out tens into your hand right now.

So that’s it. Why did I suggest this was hard? It’s easy! In fact, I’m ready now to do *my* grant. Right after I take a little walk, and make a sandwich – oh, and answer those letters, and then there’s the bookcase I have to fix…

Mole