Mole’s Wow! So now you have your own lab!

Part I – The imposter
I'll give you each a paper to read tonight. Come back tomorrow and tell me about it.

Okay, sure, looks interesting.

Ah, I'm outta here!

See you all Wednesday at the Rusty Nail! Lunch is on Mole!!

But I had a secret! Whilst I was all confidence on the outside, I felt like an impostor!

I faked my way into this job... I'm not a boss! I don't know what I'm doing...

Fortunately Prof Badger came to my rescue...

Really? You sometimes feel that way like an impostor?

Mole, everyone feels like that sometimes.

We all need help! Just ask. We have invested in you. Your success is our success...

Err, ok, um thanks. So all you needed to do was ask and he and the other faculty helped? And that's how you succeeded?

Ha! Of course not. That's just how I dealt with my impostor problem...

In the face of the unknown, we're all impostors if we think we know the answers. We're just doing our best to figure things out...

Ahh!!

Make us proud. I think you will remember it's all about the science. Everything else will fall into place...
Mole’s Wow! So now you have your own lab!

Part II – The teaching monster

You have to know much more than you are teaching, so you must have some homework to do, but that is just the beginning...

Who said that science is fair? You said you want to be scientists - this is what we do!

So discuss the papers outside of class - collaboration is essential for good science!!!

Today we are going to talk about teaching. Your students all start of WAAAAAYY over there and your job will be to get them here, across this massive canyon of ignorance. You've got to build the bridge, or at least give them the tools to build their own...

Long ago in a department far, far away, our students were performing horribly in their oral exams, so Professor Ferret and I tried something radical... Each week you will be assigned 10 papers to read. When we next meet, you must be able to explain any one of them in detail...

You won't know which papers we'll do. Oh! And passing this course is mandatory...

Why can't you just assign one paper each? It was a stunning success. That would be more fair! Performance in exams soared. Much later, at another university, I was asked by Prof. Rabbit to fill in for a similar class, this didn't go so well...

OK so let's start with this paper. Why don't you tell us about it?

Um, oh... well, I think they were using some sort of cells and, um...
YOU DIDN'T ACTUALLY LOOK AT THE PAPER, DID YOU?

HMMM. ANYONE? NO?
OK, CLASS DISMISSED!

WHAT?
OUR PROFESSOR USUALLY JUST EXPLAINS THE PAPERS TO US?

LISTEN—YOU ONLY HAVE A FEW YEARS TO LEARN WHAT YOU NEED TO KNOW TO BECOME A SCIENTIST. IT'S UP TO YOU IF YOU ARE GOING TO LEARN IT!

IF YOU APPLY FOR A JOB IN MY LAB, ALL I WANT TO KNOW IS HOW MUCH YOU KNOW, AND HOW WELL YOU CAN THINK. RIGHT NOW, I WOULDN'T HIRE ANY OF YOU!!

...AND WITH THAT I WALKED OUT... BUT I HEARD EVERY WEEK THEREAFTER THE STUDENTS WERE REMARKABLY PREPARED. MAYBE THEY LEARNED SOMETHING AFTER ALL...

I USE ALL MOD CONS IN FORMAL PRESENTATIONS, BUT WHEN I LECTURE TO STUDENTS I'M VERY OLD FASHIONED; WHITE BOARD AND EMPHASIS ON WORDS...

THERE ARE NO LECTURE NOTES FOR THIS LECTURE POSTED ONLINE!!

BUT WHAT IF WE WRITE IT DOWN WRONG?

COMPARE NOTES WITH A FRIEND, READ SOME READING, OR PAY ATTENTION, AND DON'T GET IT WRONG!!

IN MY APPROACH WE NEED TO ASSIMILATE OUR LEARNING, WHEN WE LISTEN TO LECTURE, AND TAKE NOTES, INFORMATION PASSES THROUGH OUR BRAINS ONCE AS WE HEAR, AND AGAIN AS WE WRITE. I SPEAK SLOWLY, AND WRITE ALL KEY POINTS ON THE WHITE BOARD...

THERE'S NO TEACHING IF NOONE LEARNS!!

...WHEN YOU TEACH, TRY TO BE ENTHUSIASTIC, AND ACTUALLY LOOK AT STUDENTS TO SEE IF THEY ARE GETTING IT...

AND LEAVE TIME TO TALK TO INTERESTED STUDENTS, HINT—THEY MAY BE YOUR COLLEAGUES SOME DAY...

OHH—THAT'S A LOVELY SHIRT!
BIT FOR NOW!
Mole’s Wow! So now you have your own lab!

Part III – The pact
So that's the fact? You just promise to be interested and they take all the chances and do all the work.

No, that's just how it seems. There's a lot more to this fact.

First, the trainee's project needs legs, so I need to know about emerging technologies and collaborate to bring these to the project as well.

Aha!

The project consumes me - I wake up at night thinking about it. I plan it in my head in advance, and every trainee has their own project, which compounds my job over the whole lab.

Ahh! That's how to do it. Where's a pencil?

Eek!

And of course, I write grants and secure funding so the work has the resources to succeed. A lot of times this doesn't work, but it's also my job to stay positive so that the lab doesn't lose its focus...

The attitude of the lab depends on my own attitude. If I live it, have fun with it, and am genuinely excited, they will too - it takes a lot of energy.

Clone! Blot! Clone! Blot! Clone! Blot! Clone! Blot! Clone! Blot! Clone! Blot! Clone! Blot! Clone! Blot!

Hey everyone! Discover something today!

Trust me, it's worth it! The lab is where we live, and its success depends on how we work together to be positive, make it fun, and make the fact...
Mole’s Wow! So now you have your own lab!

Part IV – The fit
RED FOX IS AN ASSISTANT PROFESSOR WHO FELT THE SAME WAY, SO SHE HIRED THE FIRST QUALIFIED PERSON SHE COULD, WHICH DIDN'T WORK OUT SO WELL.

TODAY SHE HAS A WUNDERFUL, PRODUCTIVE LAB, DOING AMAZING THINGS. THEY WORK GREAT TOGETHER, AND YES HER LAB LOOKS LIKE HER. SHE'LL BE A STAR, AND HER FELLESE WILL HAVE AN AMAZING EXPERIENCE!

OH YES I DO. IF YOU HAD THE WOULDN'T BE HERE, WOULD YOU? OK, TAKE THE DAY OFF, I KNOW THAT'S WHAT YOU WANTED.

TAKE YOUR TIME AND FIND THE PEOPLE WHO WILL GIVE YOU THE LAB YOU WANT TO HAVE. DO YOUR BEST TO FIND WHO WILL FIT WITH YOU, AND THOSE TO WORK WITH, YOU'LL HAVE A GREAT LAB, AND YOU'LL HAVE FUN! AND MOST OF ALL, YOU'LL MAKE GREAT THINGS HAPPEN. ONCE THE FIT IS RIGHT... THE REST IS JUST WORKING HARD!

C'MON MOLLY, I HAVE TO GET BACK TO WORK.

HI M... LET ME TELL YOU ABOUT MY FRIEND, PROF. RED FOX.

BUT I'M NOT YOU, MOLE! I WOULDN'T BE ABLE TO BE SO SELECTIVE!

RED FOX IS AN ASSISTANT PROFESSOR WHO FELT THE SAME WAY, SO SHE HIRED THE FIRST QUALIFIED PERSON SHE COULD, WHICH DIDN'T WORK OUT SO WELL.

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BUT I'M NOT YOU, MOLE! I WOULDN'T BE ABLE TO BE SO SELECTIVE!
Mole’s Wow! So now you have your own lab!

Part V – The plan
All of us got into science because, at some point, we read or saw something and said...

"This is astonishing!! I want to do that!!"

"And then we all find out how hard it is, and some of us forget why we were doing this in the first place."

"Heasel, you’ve spent your career studying one molecule. And every time I see what you’re up to – it’s amazing!"

"So – it’s all about focus?"

"Yes and no, mate. I don’t think you’ve ever studied just one thing. You, my friend, are consistently amazing – different paths..."

"...same outcome!"

"Wait, I get it! All good science is amazing!"

"Exactly – amaze ourselves first. Sure, there’s more to it than that, but we shouldn’t forget why we got into it in the first place!!! Pass the tea, mate!!"
So, from your central hypothesis, what are the most interesting questions you can ask? Not just what you can do, but questions so interesting that I'll be dying to know the answers.

And we need three of these!

Second, you know so much more about the project than anyone else. Of course you see "holes", but that's science. Take bold approaches and focus on trying to answer your questions in a rigorous way. Tell us your alternatives, it only has to work a bit.

I think I get it. I can show examples of experiments that say it might work.

Exactly, it's the questions that drive us. If you ask great questions, and have an idea of how you'll answer them, you'll do fine. Start again, but you'll see that you already have the approaches written—just the wrong way!

Okay, I'll get to work!

It's a big world with so many questions. We can't answer everything, but we can answer some things. If they are interesting enough to float, even just a tiny bit, you'll do fine.

So, nope. Do you always get the grants you apply for? Of course not, but sometimes, yeah. But by asking good questions, it helps us keep the research focused on what is potentially important. It's never a waste of time! We need money to do the work, but we need great questions more!
Mole’s Wow! So now you have your own lab!

Part VII – Beaten and bruised

It was a lovely day, warm and sunny. Birds were singing in the trees (outside), but poor Professor Hardwark was having a terrible day!!!

Net, Hardwark, what happened?

Oh Mole! I’ve been beaten up by reviewers—they shredded our lovely paper. What will I do? Where will I go? My scientific life is over!

So let me see those reviews.

Wait a minute, Mole. You’re right. The reviews are pretty bad, but look at this: a number of very interesting observations...

Potentially important...

Elegant demonstration.

But they all agree we have a lot to do. I’m glad I never started this project.

You’ve got a couple of choices here. Look at the editor’s letter. They say it is not suitable for publication, but they didn’t close the door. There are different sorts of rejection. This is a soft reject, but you can come back with a rebuff!

You’re suffering from ego fatigue?

It’s what happens when we have too many things to do and we are overwhelmed. We resolve weaknesses, and we want to give up. Break it down into small bites. Many of these comments look pretty useful—but they could have been a bit nicer!

A lot!!
A REBUTTAL?

Look, we'll decide what you can and should do, and what you might be able to argue away! Several of these points have NOTHING to do with your conclusions. Then we'll run an 'intent to revise' letter past the editor.

...you have a shot. And there are always more journals. You'll get your work published step by step.

You've got work to do. But in the end, I think you'll be happier with the final product!

Listen, it isn't about where you publish something even if it seems so.

IT'S ABOUT GETTING THE WORD OUT!

Hopefully your work will be discussed, presented in journal clubs, even presented at you in seminars and meetings. These reviews are important, but they are only the opinions of three people, not the community...

Or (sigh) back to work.

Let's go for a walk!

Still, it would be nice to be appreciated.

Hey, remember that you are also a reviewer. So the next time you review a paper try to think like the authors who are receiving your critique.

Too often our wonderful, lively work is turned into 'that frickin' paper' by editors and reviewers. Don't let them get to you. Fight the fatigue and don't do it to others!!

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Mole’s Wow! So now you have your own lab!

Part VIII – Money matters

Mole’s Wow! So now you have your own lab! 😊

A guide for the nervous or for the "should-be-nervous" 😏

Money matters

Hey Red! Nice to see you! I hear you’re doing super well – new grant, new paper, exciting new findings!

 являются ли вы молодым, молодым, но у вас есть несколько жалоб…

Oh Mole, you old scoundrel! Yes, well enough, but I do have a few complaints…

No one ever teaches us how to run a lab! And now I’m juggling supervising projects, teaching, reviewing papers, and managing the budget. And somehow I’m supposed to write papers! How do you do it?

Definitely! Me, too. But you either do it or let it become a problem. You have to deal with later, when it’s much worse!

Here, let me help! Those so you can eat one – really, Mole!

Thanks.

Look, it’s not that hard. First you add up the money you have for the lab for the year and subtract the salaries, service contracts, and anything else that is already committed.

Sure, you are left with your operations budget.

Exactly. Now divide this by twelve. That’s how much you have to spend each month. Now subtract 10%. That’s your budget—when it’s gone you have to wait until next month to buy anything.
But mole! That’s just realistic! I have things to do this month. I can’t just put everything on hold because I’ve run out of money based on your calculation!

But that’s what you have to do, really. You will have things you need to do every month, but if you don’t follow my suggestion, you’ll run out before the end of the year and everything will be put on hold. My way, you just tell your people to go read papers for a few days.

Okay, that about when I really need something done and I don’t have money left in the monthly allotment? Say I’m revising a paper that has heavy competition?

Oh, that can happen, and it does. That’s why you save out ten percent. It’s your emergency money.

Saved in advance rather than2 purchased from next month’s budget!

This is just bookkeeping—I wish I didn’t have to spend any time on this.

Speaking of time, it’s time to go back into the meeting, come on...

But I didn’t have my cookie...

So do I—but we have to. And by keeping it as simple as possible we make as much time as possible available for the things that we really want to do. Like thinking about our science, always leave yourself time for that!
Mole’s Wow! So now you have your own lab!

Part IX – The big fight
I EXPECT YOU BOTH TO RESPECT THE FACT THAT WE ARE ALL TRYING TO DISCOVER THINGS THAT NO ONE HAS EVER SEEN BEFORE. IT’S HARD AND FRUSTRATING, AND THIS SORT OF THING DOESN’T HELP AT ALL... 

... YOU BOTH NEED ACCESS TO EQUIPMENT, REAGENTS & SUPPLIES. SO DO I, AND OUR COLLEAGUES...

I’M SORRY IF I’VE GIVEN THE IMPRESSION THAT I DON’T RESPECT YOU OR YOUR LAB. I’LL TALK TO MY PEOPLE...

AND I’LL ASK MINE TO BE MORE CONSCIENTIOUS ABOUT RESERVING THE EQUIPMENT. MAYBE WE CAN WORK OUT A SCHEDULE.

AND IF WE ARE LOW ON SOMETHING, WE’LL ASK YOU BEFORE BORROWING IT, AND THEN RETURN IT.

WE’RE ALL BUSY, AND WE ALL THINK THAT OUR OWN WORK IS THE MOST IMPORTANT THING. WE ALL RUN LOW ON SUPPLIES AND ACCESS TO SHARED EQUIPMENT, BUT WE SHOULD APPRECIATE THE GOOD THINGS WHEN WE WORK AS A TEAM... TAKE TIME TO COMPLIMENT EACH OTHER’S CONTRIBUTIONS AND SUCCESES.

DON’T LET THE DAILY FRICTIONS SPILL OVER INTO THE LAB NEXT DOOR - WE NEED ALL THE FRIENDS WE CAN GET!

[Signature] 2016
Mole’s Wow! So now you have your own lab!
Part X – Tick-Tock
So you multitask?

No, quite the opposite! I do one thing at a time. Everything I had to do today was done before I got to my office. Okay, I do come in late, but anyone can set aside some focused time to get things done, and then have more flexible time for interactions, planning, paperwork and meetings!

So when do you read? When you have finished everything else?

Takes, no! Reading is one of the most important things! This goes on the high priority list.

Well perhaps my approach can work for you. At least it’s worth a try? Hide out, focus, get it done, and then spend the rest of the day with more flexible time. Don’t lose sight of why we are doing this!

At the end of the day often feel like I accomplished nothing.

Okay, not very well.

How’s that working for you?

No problem! Oh... my... look at the time!!!

Science!

Oh, that reminds me! I came in to ask if I could borrow a reagent?

Doing what?
Mole’s Wow! So now you have your own lab!

Part XI – Lightning strikes!

MOLES WOW- SO NOW YOU
HAVE YOUR OWN LAB!! 

-A GUIDE FOR THE NERVOUS OR FOR
THE SHOULD-BE NERVOUS!!

N°11 • LIGHTNING STRIKES!

CUE THE THUNDER: IT'S A DARK AND STORMY DAY, AND YOUNG KOALA HAS DROPPED BY FOR A CHAT. DR. EAGLE WOULD MUCH LIKE A FACULTY POSITION WITH US...

KOALA: I ENJOYED YOUR SEMINAR. I'M AFRAID I DON'T HAVE ANY "TEA," BUT PERHAPS YOU'D LIKE SOME TEA?

WE'VE GOT SOME THINGS TO TALK ABOUT...

KOALA, YOU'VE DONE SOME VERY NICE WORK, BUT YOUR PLANS FOR YOUR OWN LAB SEEM ONLY TO EXTEND THE WORK FROM THE LAB YOU TRAINED IN...

WHAT IS "TEA"?

BUT ISN'T THAT WHAT I SHOULD BE PLANNING? I NEED TO BE FOCUSED!

ABSOLUTELY; ONE OF THE CLASSIC MISTAKES A NEW INDEPENDENT INVESTIGATOR MAKES IS TO GO OFF...

THEN WHAT IS THE CONCERN?

WHENEVER YOU DO THAT EXTENDS YOUR OLD WORK WILL BE CREDITED TO YOUR PREVIOUS MENTOR, DR. EAGLE. EAGLE IS A LEADER IN YOUR FIELD, HIS IMPACT WILL BE OBVIOUS. HE MAY EVEN PUBLISH SIMILAR WORK...

YES, SO EXACTLY WHAT YOU'RE PLANNING FOR THE FIRST FEW YEARS, BUT YOU SHOULD ALSO BE DEVELOPING IDEAS THAT ARE TRULY YOURS. GRAB YOUR UMBRELLA; WE'RE GOING TO TAKE A WALK.

THEN I SHOULDN'T WORK ON THE PROJECTS I DEVELOPED? I DON'T UNDERSTAND.
Starting your first lab is a very busy time. You have to hire and train people, develop your systems, generate and interpret data, deal with admin. It will feel like you are being blown by storm winds.

It already does!

But something else has to happen. If you only extend the work of another lab, however significant, why will people come to you, rather than someone with more resources and experience?

I'll show you what I mean. Wait for it... wait...

See? You have to become a lightening rod! Become the go-to expert in a relatively unexplored area. Show us that your approaches give you real insight, be creative and passionate. Then you'll be an independent scientist!

Which area? Do you have some idea?

That's for you to think about. Remember, it will be your lab! And the problem you choose will be something you will work on for many years...

There is one important question that I've always been interested in and my systems are ideal for exploring it! But I have to think about it...

Good, focus is important but don't lose perspective about what the big question might be! Now, I think it's time for some 'pa! I know I have some around here!!
Mole’s Wow! So now you have your own lab!

Part XII – Now you see it, now you don’t
WE FIND OURSELVES BOUND TO SERVE ON COMMITTEES, LOCKED INTO MEETINGS, TIED INTO REVIEWING, AND OUR TIME GETS TIGHTER AND TIGHTER.

I'M ON FOUR COMMITTEES ALREADY, AND I'M REVIEWING THREE PAPERS!

WE HAVE TO WRITE PROGRESS REPORTS, EVALUATIONS AND OF COURSE, PAPERS AND GRANTS! AND WE TRAVEL TO GIVE SEMINARS AT TALKS AND MEETINGS!

AND WHAT ABOUT KEEPING UP WITH THE LITERATURE?

OH YES! WE HAVE TO DO THAT TOO!

WE FEEL LIKE WE ARE DROWNING! I KNOW! WE HAVE ALL BEEN THERE! IT SEEMS LIKE THERE IS NO ESCAPE... DRUM ROLL, PLEASE!

OH NO!

Ouch!

EEK

SO HERE'S THE SECRET. LEARN TO SAY "NO" SOMETIMES. YOUR JOB IS TO DO SCIENCE AND SHARE WHAT YOU'VE DISCOVERED. IT'S WHAT YOU DO.

YOU CAN'T AVOID EVERYTHING, BUT SOMETIMES YOU CAN USE THE MAGIC WORD...