

Coping with imposter syndrome in academia and research

Gina Abdelaal
(Northumbria University,
UK)

Imposter syndrome is defined as feeling like a fraud among equally skilled colleagues and the denial of one's accomplishments. Imposter syndrome does not discriminate and anyone may suffer from it – from students to scientists at the top of their academic careers. Instead of letting imposter syndrome take over, we can try to change the way we think about ourselves and our progression as scientists. We can learn from constructive criticism instead of allowing it to fuel our self-doubt. Often, scientists undersell their abilities and achievements, focusing on the negatives more than the positives. This often has a detrimental impact on our mental health. Everyone has their own strengths and weaknesses, and we can learn from constructive criticism to improve. As scientists, we often see our fellow colleagues as competition; instead of comparing ourselves, we can learn from them, thus gaining new skills. Success in academia is fickle, so we must avoid deriving our happiness from it. All scientists go through setbacks and failures; it is part of the journey, so share your experiences with friends or a trusted lecturer or tutor. Chances are they have faced similar hurdles and will be able to support you.

“What am I doing here?”, “I’m not good enough”, “I feel like a fraud” – these were the thoughts that plagued my head throughout the journey to my PhD. The advice I’ve often received is just to ignore them and focus on your work, which is easier said than done. Everyone at some point of their academic life suffers from imposter syndrome. It is the feeling that you are not as qualified or as smart as the people surrounding you, even though it is almost certainly not the case. The first study describing imposter syndrome was carried out by two clinical psychologists in the 1970s, which observed feelings of inadequacy in high achieving women who worked in male-dominated fields. Nowadays, imposter syndrome has been observed and studied more frequently and in depth in people at all stages of their career. While it is estimated that 20% of university students suffer from imposter syndrome, even people at the top of their careers can suffer too. For instance, after publishing ‘*On the Origin of Species*’, Charles Darwin reportedly said, “But I am very poorly today & very stupid & I hate everybody & everything. One lives only to make blunders”. Imposter syndrome can cause you to deny yourself opportunities, thinking that you are not good enough for them. There have been countless times when it has prevented me from applying for jobs and experiences, even if I have the required skills, all because I felt I was not as qualified as everyone else. Imposter syndrome is extremely common in the world of science, where everyone strives to be the best, which is why I want to share the strategies that helped me narrow down what made me feel like an imposter and think of ways to challenge those self-destructive thoughts. A ‘fake it until you make it’ approach might convey confidence to the outside world, but it didn’t help me gain confidence in myself. It wasn’t until I changed my thinking

patterns and started to look at things in a more positive light that the power imposter syndrome had over me began to fade.

Learn from constructive criticism and don’t undersell your achievements

Throughout my student life, I always saw the glass half empty. Whenever I received feedback for an assessment, instead of feeling proud of the positive feedback I would receive, my eye would immediately dart to the negative feedback and I would spend hours pondering over it. This is not a good habit for your mental health. While it’s good to use the negative feedback as a stepping stone for improvement, you shouldn’t ignore the positives. As you move up the academic ladder, the expectations rise as well, so you will likely face a lot more criticism. Criticism, if constructive, is there to help you learn and improve as a researcher. Don’t take it personally; it is not a measure of how good you are as a student or as a scientist. Nevertheless, if you don’t agree with certain criticisms, you can defend yourself and your work. After all, a PhD viva is, in essence, a defence of your work, so you can think of such discussions as early viva training! Every student has strengths and weaknesses, it’s normal. However, what you should not do is undersell your strengths. It won’t help you further your career and it will fuel your negative mindset. Ultimately, how many modest PIs do you know! Think of a job interview scenario where you’re competing with 10 other applicants. You will have to sell your skills and your capabilities to your interviewers to convince them you are the perfect candidate for the job. Underselling your capabilities won’t help you land your dream job. Whether you are an engaging presenter or a strong writer, remind yourself of your strengths and it will help you when you have moments of self-doubt.

Learn from your competition

Comparison is the thief of joy. There will always be someone out there who is smarter, more hardworking and with more experience than you. While your competitive instinct might set in, it actually might be more beneficial to learn from your competition instead. For example, it could be a peer with amazing lab technique. Shadow them to learn from their expertise and soon you will master the technique too. Chances are they received support from others to perfect their technique too. Once you feel confident in your skills, pass it on. Science should be a co-operative environment where everyone feels supported, not a cut-throat environment where colleagues are constantly competing with one another. A 2017 study demonstrated that individuals were better at self-assessing and had an improved performance while performing a co-operative task rather than a competitive task. No one is born a good researcher. The skills that are essential for researchers take years to develop; it is not just talent, it is consistency and hard work. Moreover, these skills are often passed down from among researchers, so don't be afraid to ask for help.

Don't let the success or failure of your work define your happiness

Success in science is fickle. Only 7% of papers submitted to top journals like *Science* and *Nature* will be published. This highlights just how difficult it is to get recognition in this field. Indeed, for scientists, failure is inevitable, particularly in a lab environment where even the smallest change in the environment can have a detrimental impact on results. Some days, experiments may work perfectly, yielding publication-worthy data. On other days, nothing will work and most people will instinctively blame themselves. Don't let failure question your capabilities, regardless of whether it's a failed experiment or a rejected publication. Whether you like it or not, failure is part of the learning process and there is not a single scientist out there who has not experienced failure. Don't derive all your happiness or self-worth from how well your experiments go on a particular day because success in the lab, and also often in life, tends to be inconsistent.

Instead of focusing your energy on self-blame, use the failure as a learning opportunity. Troubleshoot by reflecting on what went wrong and determine potential solutions. An interesting study by Craig Venter and his team was published in *Science* (see Further reading), detailing the processes behind creating a cell with the smallest genome from scratch. This achievement was not without pitfalls, all of which were all reported in the article; yet, the determination of Venter and his team eventually allowed them to make a spectacular scientific breakthrough. Although scientific advances like this are incredibly rare, we can all learn valuable lessons from Venter and his team, which ultimately led them to turn all the failures they had during the project into a huge success. This drive is what pushes research forward.

Ask for support

One thing that helped me cope with imposter syndrome is sharing my experiences with others. I was surprised by just how many of my friends had felt the same. So, there is a good chance your peers are experiencing the same feelings of self-doubt as you are. Chasing perfection has led to many scientists, current or aspiring, suffering from imposter syndrome. Receiving support from others can have a massive impact on changing the way you feel about yourself. Speaking to trusted lecturers and tutors may also help, even though it may feel awkward to discuss these thoughts of inadequacy with them in case they agree with them. Most faculty members will have experienced imposter syndrome at least once in their academic career; so, they will be able to provide first-hand advice as to how they coped with it and reassure you that you are not alone. Take inspiration from their journey and how they achieved success even in the presence of self-doubt. A common trait that many people with imposter syndrome have is the inability to accurately assess their own competence. This is where a discussion with a tutor or faculty member will help, as they will be able to give a more accurate portrayal of where a student stands skills-wise and this can provide major reassurance. Another option is signing up for the university counselling service, which can provide confidence support and advice to guide you through the rest of your academic studies. ■



Further Reading

- Clance, P.R. and Imes, S.A. (1978) The imposter phenomenon in high achieving women: Dynamics and therapeutic intervention. *Psychotherapy: Theory, Research & Practice*. **15** 241–247.
- Gardner, R.G., Bednar, J.S., Stewart, B.W., Oldroyd, J.B., and Moore, J. (2019) "I must have slipped through the cracks somehow": An examination of coping with perceived impostorism and the role of social support. *J. Vocat. Behav.* **115** 103337.
- Balconi, M., Crivelli, D. and Vanutelli, M.E. (2017) Why to cooperate is better than to compete: brain and personality components. *BMC Neurosci.* ;**18** 68.
- Nature (2020) Editorial criteria and processes. *Nature*. <https://www.nature.com/nature/for-authors/editorial-criteria-and-processes> [Accessed 28 May 2020]
- Science (2020) The Science Contributors FAQ. *Science*. <https://www.sciencemag.org/authors/science-contributors-faq> [Accessed 28 May 2020]
- Hutchison, C.A., Chuang, R.Y., Noskov, V.N., Assad-Garcia, N., Deerinck, T.J., Ellisman, M.H., et al. (2016) Design and synthesis of a minimal bacterial genome. *Science*. **351** aad6253-1– aad6253-11.



I completed my BSc in Biomedical genetics and Masters in research at Newcastle University. I am currently undertaking a PhD investigating novel iron chelators as a potential cancer therapy at Northumbria University. Email: gina.abdelaal@northumbria.ac.uk