

PhD student: A medical writer in the making!

Somsuvro Basu

Institute of Cytobiology and Cytopathology
Philipps University Marburg
Marburg 35032, Germany

Correspondence to:

Somsuvro Basu, PhD
Institute of Cytobiology and Cytopathology
Philipps University Marburg
Robert Koch St. 6
35032 Marburg, Germany
+4915731972527
Email address: basu.somsuvro@gmail.com

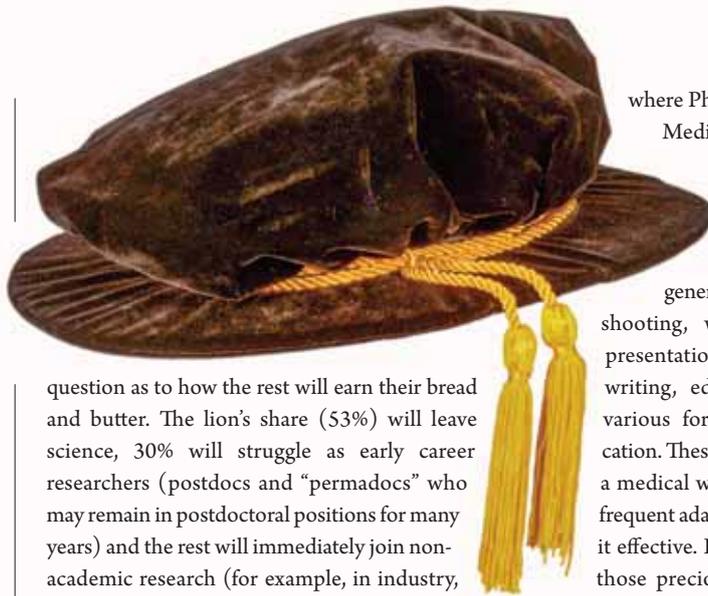
Abstract

With the ever-increasing stock of PhD holders and the diminishing number of permanent academic positions, alternative careers are in demand. Before the impostor syndrome marches in, these graduates need to realise that there can be a bright future, which is even possible outside of academia. However, they require appropriate guidance to find their true calling. Medical writing could be a perfect fit for many with a background in life sciences. During their research years, PhD students acquire key skills that could be cornerstones of a medical writer's portfolio. Unfortunately, they may not realise this right match until it is too late. In this article, I discuss the precious dexterities of PhD students that could shape them as medical writers. As an added bonus, certain tricks and practices are revealed to complement this intriguing process.

Introduction

In Germany, 28,147 PhD researchers (referred henceforth as "PhDs") wore their graduation hats in 2014.¹ Do you know how many of them will eventually use the title "Professor" in front of their names? Most probably, no more than 130!² Yes, you read it correctly.

The US, the biggest spender in research and development (R&D),³ produced a staggering 54,070 PhDs in 2014.¹ Only a relatively few of these bright minds will receive the laurel wreath of professorship. Hence, this raises the immediate



question as to how the rest will earn their bread and butter. The lion's share (53%) will leave science, 30% will struggle as early career researchers (postdocs and "permadoes" who may remain in postdoctoral positions for many years) and the rest will immediately join non-academic research (for example, in industry, non-profit organisations, government).² Eventually, most of the postdocs will leave science or join the non-academic sector, while a minuscule proportion will end up as permanent researchers or professors.²

I am addressing the 47% of PhDs who wish to stay in science. You have to strike while the iron is hot! You need to learn how to avoid the impostor syndrome (self-doubts regarding your worthiness)⁴ and learn how to defeat the mental health challenges that nearly one-third of PhDs suffer from.⁵ However, these obstacles can't be enough to shatter PhDs' exceptional characteristics. PhDs are a unique horde of individuals. Less than 2% of the world's population possess a PhD degree.⁶ Therefore, have confidence in yourself and trust the precious skills you developed during your PhD or postdoc years.

The world outside academia needs your expertise. There are several areas in industry where PhDs can shine without having any prior industry experiences. The most popular sphere befitting a PhD is R&D. However, the time has come when other alternative roles have become attractive. I am specifically highlighting a domain

where PhDs have proved their mettle.

Medical writing! Does it ring a bell? Not yet? Then imagine a typical week of a PhD student or postdoc researcher. It includes data generation, optimisations, troubleshooting, with equal doses of data presentation, literature searching, writing, editing, teaching, and other various forms of scientific communication. These skills also form a segment of a medical writer's skill set, which needs frequent adaptation and refining to render it effective. I would specifically highlight those precious proficiencies that PhDs could decorate and advise subtle actions that will make the transformation even smarter.

In Germany, 28,147 PhD researchers wore their graduation hats in 2014. Do you know how many of them will eventually use the title "Professor" in front of their names? Most probably, no more than 130!

Skills of a PhD: indispensable for medical writing

Academia compels us to aim at a higher goal, publish X number of high impact articles and establish a lab. We neglect to focus on the smaller victories we achieve along this tough journey. We do not celebrate our first lab meeting, we overlook the dexterity in maintaining an up-to-date lab book, the red-linked first manuscript draft always drains our energy, and the nagging peer reviewer fuels nightmares. We ignore the enormous set of soft skills we gain from all these episodes. I try here to discern those skills that are essential for the transformation of an academic into a medical writer (Figure 1).

1. Scientific communication

Communication forms the nucleus of a PhD's life. We need to communicate every day, orally or in a written form; this key feature constitutes a hefty chunk of the PhD curriculum. In fact, the importance of communication began when applying for your PhD programme.

The world outside academia needs your expertise. There are several areas in industry where PhDs can shine without having any prior industry experiences.

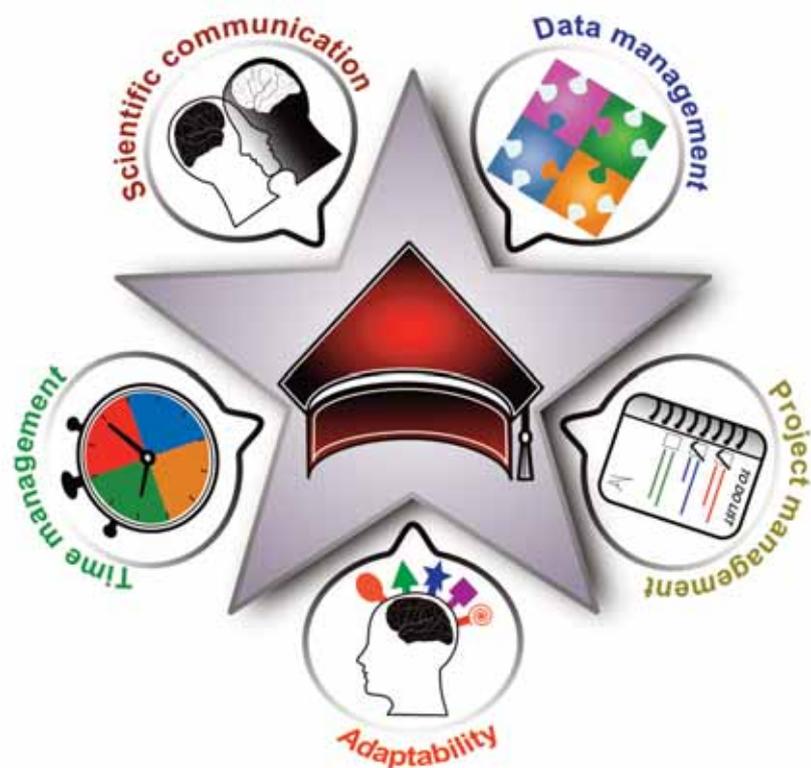


Figure 1. The skills owned by the PhDs, indispensable for a medical writer

You meticulously studied the lab’s research, aligned your skills to the existing projects, and wrote a spirited email to the principal investigator selling yourself. You ticked the box of scientific communication. The PhD training helped you to nurture it. Below are tasks a PhD does entailing scientific communication, the principal trait of a medical writer:

- Presenting in lab meetings and journal clubs
- Discussing research with colleagues, supervisors, or collaborators
- Presenting posters or talks in conferences
- Writing lab reports, literature reviews, and grant reports
- Writing articles, reviews, and thesis
- Peer-reviewing and editing scientific articles
- Communicating and negotiating with the interrogative peer-reviewers

2. Data generation and integrity

PhDs generate data, day in, day out. This activity not only helps churn out manuscripts but also teaches important skills related to data

security, data reproducibility, and supporting a hypothesis. This is a vital prerequisite to be a medical writer. Data management is in the spotlight of a medical writing affaire, where the remainder fails if the data are flawed or misrepresented.

3. Project management

PhDs are born project managers. They manage multiple projects laterally, ensuring a sound beginning coupled with a productive completion.

A successful project manager requires identification of achievable goals to be accomplished within a realistic time frame. This requires proper prioritisation and rectification. PhDs proudly take on these responsibilities. But how? A few tips are given below.

- Maintain an up-to-date lab notebook
- Manage to-do lists for the day, week, month, and year
- Optimise and troubleshoot experiments
- Write grant proposals and annual grant reports

Academia compels us to aim at a higher goal, publish X number of high impact articles and establish a lab. We neglect to focus on the smaller victories we achieve along this tough journey.

- Manage budget, reduce lab costs
 - Organise a conference or an event
 - Envisage success
 - Develop leadership skills
 - Delegate tasks to the lab members
 - Build and nurture collaborations
 - Ensure timely completion of the PhD thesis
- These skills are indispensable for medical writers, whether managing internal projects or those of clients.

4. Time and self-management

Manage yourself before starting projects. PhDs can do this singlehandedly, with examples listed below.

- Function effectively under limited supervision
- Endure and overcome immense pressure
- Maintain tight deadlines in finishing projects, manuscripts

PhDs must plan ahead; the process starts while writing grant proposals, laying out the plan for the next 3 to 5 years. We foresee a future milestone and then plan the path accordingly. This skill is also highly essential for a medical writer.

5. Adaptability

“Adaptability is not imitation. It means power of resistance and assimilation.”

–Mahatma Gandhi

A PhD life oscillates between rewards and obstructions. The adaptable PhDs can easily evade roadblocks by identifying probable solutions and learning from the mistakes. They could run several projects in parallel but prioritise depending on their importance.

Adaptability doesn’t only help a PhD to succeed in the lab; PhDs are global citizens. A recent study showed 32% of researchers who earned their PhD in UK are relocating to a different country.⁷ Being adaptable comes handy here and eases the process of settling down in a foreign environment amidst an unfamiliar culture.

This is one of the key features of medical writers. They always need to be on their toes, to mould themselves according to the requirements of an assignment. Jumping from one therapeutic area to another, developing different regulatory documents, summarising reports for different products – all these tasks need quick but efficient attention shifts. Hence, medical writers’ adaptability is required to be at its peak.

Tips, tweaks, and tricks: Nurture the budding medical writer

The previous section summarised the hidden qualities that PhDs usually do not recognise in their curriculum although unconsciously they absorb these soft skills that ultimately could help them to build a career in medical writing. Now, it is time to steer you through a few practices that will make this journey even more enticing (Figure 2).

1. Go beyond your research genre

A research article is not your baby! The efforts of co-authors, editors, peer reviewers, copy editors, and proofreaders amalgamate to bring out the final product. You must grasp areas beyond your research field. A certain versatility is necessary for medical writers, as they need to handle varied areas depending on the requirements of the agency they work for or their client's demand. Medical writers take on client's data as their own and efficiently grab the crux of it.

PhDs could master these skills too and a few suggestions are provided below.

- **Journal clubs**

The paper you're presenting to the journal club discussion group belongs to you for the next 30 minutes. Own it! Show your peers why this story has created such a roar in the field. Do not forget to show the ways it could have been even worthier. This process would not only sharpen your communication skills or problem-solving attitude, but it will also teach you how to train yourself quickly on something foreign to you by living it.

- **Peer reviewing**

This important task is similar to journal clubs but gives you more authority and enriches your evaluative skills. This certainly helps you enhance your research objectivity and achieve a sense of prestige as perks. However, remember, you are undercover during the whole process, completely anonymous!

- **Blogs**

Now you can remove that cover. Unleash your knowledge about anything under the sun. This creates a win-win situation. On the one hand, you polish your writing skills and show your target audience what you are capable of, and on the other hand, you already start creating your client

base. Now, this is your baby! Show your resourcefulness and versatility. Initially, you can pick a subject that is close to your genre but capable of merging you with another close-knit area, e.g., a common research tool or technique.

2. Use social media for a good purpose

In this smartphone age, we are all dwelling in a virtual world, but ordinarily forget to use our presence smartly. Here are ways how you can make your existence in social media fruitful.

- **Be a storyteller**

Do not merely share your holiday pics! Spend some words describing your experience. Emphasise what you learnt in those moments. Never let the communicator in you stand still. Be attentive, and use any little info as a brick to build your future. For instance, the exotic coconut tree during your last vacation in the tropics could inspire you to write about the health benefits of this fruit. Link your blog posts to your Facebook or Snapchat accounts. Make the posts interactive enough, compelling viewers to leave comments and be curious about your next story.

- **Build your virtual network**

This can be a real treasure. Connect

with people using professional networking platforms like LinkedIn. Clean your house before you invite! Have a polished account before sending networking request. Your profile should be your virtual face, linking your past to your present, aspiring for a brighter future. Share interesting stories/articles, engaging a like-minded community. By doing this, you are grabbing the attention of existing medical writers who could function as future job referrals or potential employers.

- **Volunteering**

Lend a hand. Allotting a small part of your day to volunteering could open the door to a better future. A study discloses volunteers are 27% more likely to find a job in comparison to the non-volunteers.⁸ The following tasks could definitely motivate the volunteer in a PhD.

Be a storyteller.
Do not merely share your holiday pics! Spend some words describing your experience. Emphasise what you learnt in those moments. Never let the communicator in you stand still.

- Help your PhD advisor to organise a conference
- Volunteer as the student representative at the university career centre
- Write press releases and help manage social media accounts of the university
- Organise PhD retreats and career days to network and help people in the same boat



Figure 2. The tips, tweaks, and tricks to nurture the budding medical writer

- Be a member of the European Medical Writers Association (EMWA). First, you will get to learn all the nitty-gritty information about medical writing. Second, you can act as volunteer to support the ongoing initiatives and get your foot in the door. The gained experience enriches your CV and helps you be a part of an extensive network of medical writers and scientific communicators.

4. Look for a mentor

“A mentor is someone who sees more talent and ability within you, than you see in yourself, and helps bring it out of you.”

– Bob Proctor



EMWA provides you the precious opportunity to network and communicate with medical writers from all over Europe. Attend an EMWA conference and build strong relationships; this could be the best platform to identify your future mentor.

Mentors will certainly inspire your personal and professional growth. Especially during the phases when the impostor syndrome creeps into the lives of the PhDs, the mentor's encouragement works as a charm. Mentors identify your strengths and make them even stronger, and turn the weaknesses into your strengths. Find a mentor who is currently working as a medical writer and has extensive experience to guide you through the steps to achieve your goal.

EMWA provides you the precious opportunity to network and communicate with medical writers from all over Europe. Attend an EMWA conference and build strong relationships; this could be the best platform to identify your future mentor. Be proactive and show genuine enthusiasm before asking someone to mentor you. Create an affiliation of mutual knowledge and experience sharing. Try to give more than what you receive! Then you can take the proceedings forward by being a mentor.

Conclusion

PhDs acquire certain skills during their study period mostly unconsciously. This article makes these skills conspicuous enough for the PhDs to realise that they are capable of leading a meaningful career in science even outside of academia.

Hey PhDs! The philosophy of “publish or perish” cannot be the sole standard to gauge your talent. You are smart enough to break the so-called dogma. Nevertheless, you need to find your niche as quickly as possible. My attempt here is to help you find your niche as a medical writer by highlighting the skills you already own and the ways you can invigorate the process even further.

Acknowledgements

I would like to thank Dr Sneha Patra for the immense assistance in creating the figures.

Disclaimers

The opinions expressed in this article are the author's own and not necessarily shared by his employer or EMWA.

Conflicts of interest

The author is employed by the Philipps University Marburg. The views and opinions shared in this article are those of author alone and do not necessarily reflect those of his employer.

References

1. OECD (2016), OECD Science, Technology and Innovation Outlook 2016. OECD Publishing, Paris; 2016.
2. The Scientific Century: securing our future prosperity. RS Policy document 02/10 The Royal Society; 2010.
3. OECD (2017), Gross domestic spending on R&D (indicator); 2017.
4. Weir K. Feel like a fraud? [Cited 2013 November] gradPSYCH Magazine, American psychological association. Available from: <http://www.apa.org/gradpsych/2013/11/fraud.aspx>.
5. Levecque K, Anseel F, Beuckelaer AD, Heyden JVD, Gisle L. Work organization and mental health problems in PhD students. Res Policy. 2017;46(4):868–79.
6. Why PhDs Are More Valuable Than Other Job Candidates [Cited 2017 April] LinkedIn article, Available from: <https://www.linkedin.com/pulse/why-phds-more-valuable-than-other-job-candidates-sorbara-phd/>.
7. Bohannon J, Doran K. Data from: Introducing ORCID. Science. 2017; 356(6339); 691–2.
8. Spera C, Ghertner R, Nerino A, DiTommaso A. Volunteering as a Pathway to Employment: Does Volunteering Increase Odds of Finding a Job for the Out of Work? Corporation for National and Community Service, Office of Research and Evaluation: Washington, DC, 2013.

Author information

Somsuvro Basu, PhD, is a molecular cell biologist by training. He has more than 8 years' research experience spanning from parasitology to human mitochondrial biology. He is pursuing his postdoctoral research at the Philipps University Marburg, Germany, and gearing up to be a medical writer. He is proudly associated with the EMWA social media team.