



BRIGHAM AND WOMEN'S HOSPITAL POSTDOCTORAL ASSOCIATION

Tips to Survive During the Lockdown

by Guyu Qin, Ph.D.

On March 10th, Governor Charlie Baker declared a state of emergency in the Commonwealth of Massachusetts, giving the administration more flexibility to respond to the Coronavirus outbreak. Then on March 23rd, an emergency order was issued requiring all businesses and organizations that do not provide "COVID-19 Essential Services" to close their physical workplaces and facilities to workers, customers, and the public. Recently, the stay-at-home advisory was extended through May 18th. Although remaining inside is a good way to protect yourself and others from the novel coronavirus, it could also lead to boredom and even craziness. So, what's there to do while stuck indoors?

First of all, master self-discipline. Working from home is a big challenge for not only a procrastinator but almost everyone. It requires us to have a higher degree of self-control and organize our daily home time. You may want to spend 5 minutes to set clear goals and have an execution plan for each day. Occasionally making up simply to increase the sense of ritual may also become a good way to make you cherish the time of the day even you stay at home. If you stumbled or ruined your schedule, don't let yourself get wrapped up in guilt or anger. Just learn from your missteps, forgive yourself and keep moving forward.

Secondly, stay fit. Working out at home is a good choice. You can do curls, squats and twists with your heavy hardcover books. Use a chair, a table or a door handle smartly to burn your arms, legs, and hips. Also, there are many online K-pop, urban, hip-hop dance courses for you to pick up! No excuses and no days off. In addition, you may not want to go to the grocery stores very often and feel burdened with preparing three meals a day. So, why not clean, cut and preserve the perishable vegetables in the freezer. Then just find some easy recipes and balance your diet.

Thirdly, find webinars and keep learning. Even though lab work needs to be postponed, you can still learn a lot through virtual sessions. It may also be a good time to finish writing assignments, improve your own knowledge, and gain new skills. Keep close contact with your principal investigator and your lab friends via zoom or other virtual meeting apps.

Some useful information for [wellness](#) along with [workshops and resources](#) for postdocs are posted on the NIH website.

The BWH Post(Doc)

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PostDoctoral Association

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Interested in joining the editorial team or becoming a contributor? Do you have a question, comment, or ideas for our next issue? Let us know!

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What Are Your Reading Habits?

by Vanessa Sue Wacleche, Ph.D.

Tick tock.... Time always sets up limitations. An ordinary working day, that should last a minimum of 8hrs, consists of so much a scientist must do. Conducting a research project, which includes the elaboration, performance, and analysis of experiments is the first task of a postdoctoral trainee. Reading research articles and keeping up with the literature is also an important task that all scientists, including postdocs, should do regularly. Reading can inspire a scientist to advance his/her/their research and lead to collaborations locally and internationally; however, finding the time to read can be challenging after a long day in the lab. Considering the limitation that time represents, the BWH PDA communication team was curious to know the potential struggle scientists face in their task of reading the literature. Therefore, a survey entitled *Literature in Research: A Survey of Reading Habits* was launched last year to assess potential issues postdocs may have. The results of the survey that was collected from August 2019 to March 2020 will be presented in article series with this Part I and next to follow in subsequent issue of the newsletter. A total of 139 postdocs working in different BWH research areas responded to the survey, 41% were from BWH (Table 1).

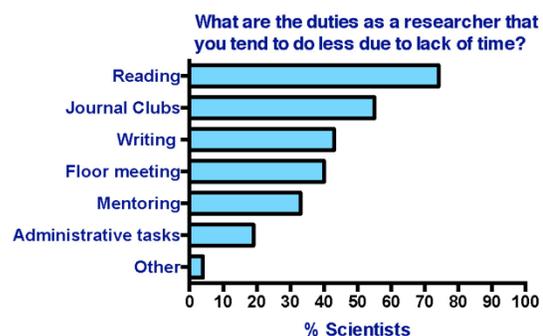


Figure 1. Neglected task by postdocs from Boston

The top duties postdocs slack on due to lack of time are summarized in Figure 1; 74% of postdocs who took the survey felt they do not have enough time to read. On the question of how often they keep informed in terms of published discoveries or technologies, 34.5% say they do so on a weekly basis as oppose to 20% who can only find the time once a month. Only 11 % of research fellows follow this habit daily. Sadly, 34.5% of postdocs admitted that they have trouble in keeping up with the literature due to lack of time. Regarding the time spent on weekly basis reading research articles, most of the surveyed postdocs take 1-2hrs to read the literature (Figure 2). Only 14% of postdocs prioritize reading by investing more than 5hrs for this activity. Concerning potential solutions that can enhance reading habits, postdocs appear to have mixed opinions (Figure 3). Reading/writing accountability groups require a commitment that may not be easy to achieve at long term. One can wonder whether writing/reading skill didactics will provide a significant change on postdocs reading habits. Journal clubs may be helpful and the most realistic solution. Several departments, associations and labs in HMS hold weekly or monthly journal clubs. The Brigham Education Institute hosts a [journal club](#) on the second Thursday of every month. This event is moderated by BWH faculty members and trainees. In addition, the BWH PDA hosts a monthly journal club for all the postdocs who want to learn about new technology and to continue mastering skills such as communication and critical thinking. A new schedule will be posted on the [BWH PDA website](#) this coming fall and will be communicated through the BWH PDA weekly digest e-mail. Some postdocs also proposed their own solutions:

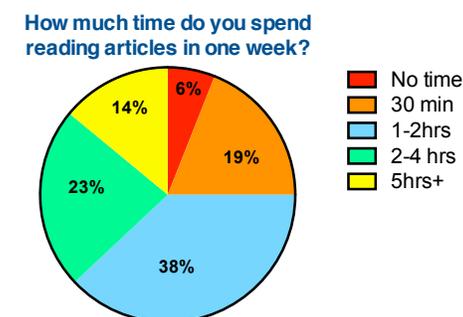


Figure 2: Time spent on reading articles per week.

- "Self-Discipline, it is difficult"
- "Having policies in place that would help postdocs not spending 95% of their time working at the bench. This way we could have more time to read, be updated on the most recent literature in the field and better plan our experiments"
- "Organizing seminars not only about our research results but also about the bibliography."
- "More time - through less admin burden. We don't need more clubs/responsibilities, we need more time to do actual research which includes protected reading and thinking time."

One thing is certain: changes need to occur. The PDA could organize seminars that would discuss the bibliography of a specific scientific concept with the use of tools such as Mendeley or EndNote. Also, the use of social media (e.g. Twitter, Reddit) may be used to stay up to date with hot topics in a specific field. Most high-impact factor journals including *Nature*, *Cell*, and *Science* have twitter accounts and regularly post new findings that can lead to discussion in a chat format. Scientists also have accounts where they discuss science. Due diligence regarding the use of social media is required. Perhaps a discussion with HMS authorities and principal investigators regarding organization of tasks in order to protect time for postdocs to read research articles may be valuable and create change of habits. At the end of the day, all a postdoc really wants is to achieve her/his/their goal: to become a better prepared scientist with skills ready for next opportunities. If you have comments, please communicate with the BWH PDA or [Vanessa Wacleche](#).

Table 1. % of postdocs at each institute and research area.

Survey Demography	
Institution	
BWH	41%
HMS & affiliate institutes	54%
Other research institutes	5%
Areas of Research	
Basic	58%
Translational	35%
Clinical	23%

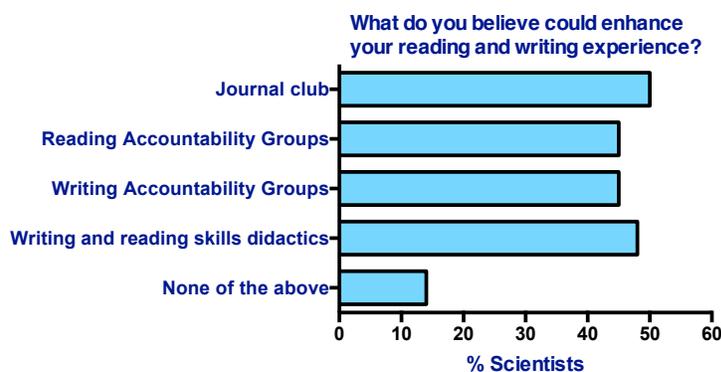


Figure 3: Solutions proposed by the BWH PDA

Getting Idea to Market Part II

by Andreea Stancu, M.D.

In the previous issue of the newsletter "Getting ideas to market – Part I" detailed the basics of patenting. This article will complement Part I with some practical advice on how to protect research that you are aiming to commercialize, and it will include aspects about intellectual property, importance of patent claims, protection of the issued patent and licensing.

Intellectual property (IP) protection

Developing a solid intellectual property strategy is essential to increase the discovery's value and odds of commercial success, including attracting investment from a commercial partner. What is exactly intellectual property? The term refers to any creation which is given the legal status of property. Tools to protect IP include: patents, copyrights, trademarks, plant variety protection rights, trade secrets, and protection of regulatory data. Without IP protection, the many inventions that have shaped society would not have existed. Innovation can be portrayed as a cycle, "innovation cycle", because it is in fact a continuous process of discovery, validation development, registration and commercialization, leading to the creation of value which can be reinvested in further innovations.

Patent Claims

As stated previously, patents are the strongest form of discovery protection and represents a legal mechanism granted by the government to an inventor of the right to exclude others from making, using, selling, offering for sale, or importing a patented invention. At universities and non-profit institutions, evaluating a discovery for further patenting processing becomes costly and time consuming, because it would make sense only if it will generate far more revenue than it costs to obtain a patent. The most important part of the patent is the claims section. What is a claim? The claim represents the scope of a legal protection given to the owner of the invention covered by the patent. Patent attorneys advice inventors to draft the patent with claims which would bring minimal set of elements that make the invention novel and non-obvious. The framework of the claims is critical, because less details describing the discovery, the more convenient becomes to prove the infringement and harder for the competitors to get creative around the invention. The inventor has to provide the right balance in identifying this minimal set of elements, that would allow the patent to be issued and protect it from the competitors. There is a difference between certain biotechnology field that will make patent filling easier or harder. For example, certain medical devices will receive a clear description how it will work in comparison to discoveries in fields such as chemistry or biology which are unpredictable and experimental data is needed to prove that an invention is working.

How to protect your patent?

Once the patent has been granted it will last 20 years from the date of filling. However, the patent has to be adequately maintained and rigorously protected during its entire term. This consists in periodic maintenance fees which in United States are due 4, 7 and 11 years after issue, while in other countries are due annually. It is very important to mention, that patent owners at non-profit institutions assess the issued patent whether is still worth maintaining before paying the required fee. This strategy is applied to patents that become obsolete by other innovations or turn out to be less useful than anticipate, or failed commercialization.

Licensing and product development

Most universities and non-profit institutions have a licensing managers team, business developers and marketing teams that will use resources and strategies to identify potential licensees and market inventions. Partners Health System offers support through the [Innovation Team](#) and the researchers should submit a [disclosure form](#) once there is a clinical or scientific discovery. They will also identify prospective licensees through market research and pitch licensing opportunities to industry scientists and business development executives at

Different Forms of IP in Biotechnology

Patents

*Isolated polynucleic acids, peptides and polypeptides, enzymes, microorganisms, viruses, vectors, antibodies, probes, vaccines, compositions, expression systems, cell lines, plants, seeds, transgenic organisms, methods for preparation or use of the above
*Medical devices

Trade marks

*Words/name, computer icons, graphical designs, multimedia elements or use of the above
*Medical devices

Registered designs

*Medical devices, biochemical, biophysical or bio-electrochemical apparatus

Trade secrets/
know how

*Laboratory notebooks, design workbooks, customer information, documented internal processes, "data exclusivity" on clinical data generated for therapeutic approval

Plant breeders'

*Plant varieties, propagating and harvesting material from plant varieties

Domain names

*Web addresses

partnering meetings. When the interest is shown, the inventor is the best person to describe the invention and its technical competitive advantage. Inventor's network with the industry is the most advantageous path to find a licensee, because of the common research or consulting relationship. Every approach to licensing is unique to each department and the licensing managers are the one suitable to help as they have the know-how and guide you through the process.

An alternative to licensing the intellectual property to an established business is forming a start-up company. Key factors that should be considered when it is created: inventor's interest, market audience, the startup's competitive advantage, potential revenues, the potential for multiple products, product development risk and expected business viability.

Biotechnology is a rapid evolving field with slow returns of the investments. For this reason, it is important for public research organizations and enterprises to protect the innovation that they generate with Intellectual Property Rights (IPR), which provide a basis for return on investment in research and development, by granting monopoly rights for a certain amount of time to their owners.

What is patentable?

Genes and nucleic acid molecules, e.g.:

- Disease related genes for diagnosis
- siRNA molecules for therapy

Proteins, e.g.:

- Insulin
- EPO for therapy
- Cellular receptors for drug screening

Enzymes, e.g.:

- Protease for washing powder
- Cellulose-degrading enzymes for bio-fuels

Antibodies, e.g.:

- For cancer treatment
- Pregnancy test, diagnostics

Virus and virus sequences, e.g.:

- HIV for blood testing
- Development of vaccines and therapies

Cells, e.g.:

- Hematopoietic stem cells for treatment

Microorganisms, e.g.:

- Bacteria for bioremediation, yeast for food

Transgenic plants and animals, e.g.:

- Herbicide resistant soybean
- Golden rice with pro-vitamin A
- Disease models for research
- Donor animals for xenotransplantation

What is not patentable?

Sequences without a known function, e.g.:

- Expressed Sequence Tags (ESTs) resulted from automated sequencing

Genetically modified animals which is suffering without any substantial medical benefit, e.g.:

- A genetically modified animal which is used only for cosmetic testing

Plant varieties, e.g.:

- Golden delicious apples

Animal varieties, e.g.:

- Holstein cattle

Human embryos

Processes which necessarily involve the use and destruction of human embryos

Human germ cells

Tuition Reimbursement Mechanisms for Postdocs

by Ashley Ogawa-Wong, Ph.D.

Taking classes during lockdown? Here are some options for tuition reimbursement.

Recent [reports suggested](#) the possibility of several cycles of lockdown over the next couple of years—a situation less than ideal for bench researchers like myself. Though it's frustrating to be unable to complete experiments, I am taking this opportunity to acquire new skills and focus on personal development. In the wake of COVID-19 shutdowns, a myriad of education resources are being offered free of charge ([PikeNotes](#) [login required] has an excellent list); however, many other coursework and certification programs can be quite expensive. Luckily, several mechanisms for educational fee reimbursement are available to Brigham postdocs.

Check your funding sources

Will the coursework you're interested in benefit your research? If so, your PI may have educational costs budgeted in their grant from which you can be reimbursed. You may also be eligible for reimbursement if you are funded through a T32 institutional training grant. Before consulting your PI, prepare to explain what the course offers and how it will enhance your work—this is a great opportunity to practice negotiation skills.

For additional information, refer to the [NIH Grants Policy](#).

Apply for internal funding

Full-time BWH postdoctoral fellows can apply for a Brigham Research Institute (BRI) microgrant for up to \$1500 (\$2500 under certain circumstances). While some postdocs use microgrant funds towards lab supplies, awards can also be used to cover educational and training costs. The application is open to both U.S. citizens and non-U.S. citizens and is accepted year-round on a rolling basis. Personally, I think all postdocs should take advantage of the microgrant program because the benefits are two-fold: in addition to tuition coverage, a successful award looks great on a cv!

For eligibility and application instructions, visit the [BRI website](#).

Table 1. Reimbursement Amount Per Fiscal Year

	Course Type	
	Hospital-Related Non-Degree/Degree Programs	Certificate Programs
Employee status		
Full time (36-40 h)	\$3000	\$1600
Part time (20-35 h)	\$2000	\$1100

Brigham and Women's Hospital (BWH) tuition reimbursement program

BWH offers tuition reimbursement for postdocs after 6 months of continuous employment. The reimbursement program is comprehensive, covering tuition in addition to other course-related costs such as registration, application fees, and books, among others. Table 1 outlines the reimbursement limits, which depend on the employee classification and program type. To receive payment, employees must receive a passing grade (i.e. C or above) and continue to work at BWH for a minimum of 6 months after receiving the reimbursement.

For additional information, visit hospitalpolicies.ellucid.com (HR-507)

Harvard Tuition Assistance Program (TAP)

To be clear, most BWH postdocs are not eligible for Harvard TAP; however, BWH postdocs may qualify if they conduct Harvard research and are paid through the Harvard payroll.

For additional information, please refer to the [TAP booklet](#).

UPCOMING EVENTS

Save The date! Mentoring Circle Program (MCP) Virtual Celebration

More info coming soon! We are excited to celebrate the hard work of this year's mentors and mentees at this virtual celebration.

Thursday, May 28 | 4:00 to 5:00 PM | Zoom

Talk Nerdy to Me

Do you struggle with communicating your research to lay audiences? Don't miss this two-part workshop by Melissa Marshall. Then, showcase what you've learned in an open mic competition later this Fall! Watch [Melissa's TED talk](#) for a preview of the workshop.

On-site Workshop (oral presentation focus)

Monday September 21
5:30-7:30 pm

Webinar (visual presentation focus)

Monday, September 28
12 pm

National Postdoc Appreciation Week (NPAW)

If the state of the pandemic allows it, the next NPAW will be held next Fall. Tune in for a week social and networking events in celebration of the postdoc community!

September 21-25

