



Vision of **PMMH**

A young researchers' perspective
on their laboratory, their work, and research

Feedback on the Vie de labo discussions at CoDoc 2022
Châtenay-sur-Seine - May 23-25 2022

by Samantha Kucher, Gatien Polly, Manon Quiros & Baptiste Lafoux

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by Samantha Kucher, Gatien Polly, Manon Quiros & Baptiste Lafoux

from Laboratoire Physique et Mécanique des Milieux Hétérogènes (PMMH) - CNRS UMR 7636 - ESPCI PSL, Sorbonne Université, Université de Paris

Foreword

From 23rd to 25th may was held the colloquium of non-permanents of the PMMH, an opportunity for us doctoral and postdoctoral students to gather in an informal context and get to know each other, as well as get to know more about each of our respective research projects.

It took place in Châtenay-sur-Seine, in a place known as “Le domaine de La Pépinière”, usually rented out to people celebrating a reunion amongst friends and family (such as wedding celebrations), or organizing small scale seminars or team-building events.



Domaine de La Pépinière

As stated previously, the goal was to meet in an informal context to share about our scientific projects, as well as our general state of mind. Among other activities, an activity of “Vie de Labo” was organized to get a feel of the state of mind of doctoral and postdoctoral students in the PMMH lab.

The following report presents what came out of this “Vie de Labo” activity. We believe it may serve as a tool for future discussions about the everyday life in the lab, and the general well being of the people that work in it.

Furthermore, the results from this activity went above and beyond what we expected, and allowed people to speak out about concerns about life in a research lab. Thus, far from being “PMMH-specific”, we hope this document may be of use to other labs in the elaboration of such activities, as well as a useful medium to aid in the betterment of PhD and postdoc students' working conditions.

Introduction

As mentioned above, during the colloquium, a “Vie de Labo” activity, organized in a few separate sessions, was organized in order to facilitate a discussion about the life of non-permanents in the lab. A form was first sent to all the members of the lab two weeks in advance, by means of which it was possible to target the areas of discussion that we felt were most important to address. All in all, 41 answered the form (24 out of 38 PhD students, 6 out of 16 postdocs, and 11 out of 40 permanents), comprising about 20 questions about how life in the lab is perceived, different according to if the person replying was a permanent, a PhD student or a postdoc.

After a first overview of the results of the form, we separated in small groups to discuss specific issues that came out from the results of the latter.

These discussions revealed shared experiences, both positive and negative.



Replies to the question “what is PMMH for you?”

As we can see in the above, PMMH seems to be seen as a very positive working environment, centered on exchange, mutual aid, and openness.

However, while a PhD is an extremely rewarding and fulfilling experience, the issue of mental health in doctoral programs is of greater concern than ever. In a context where 24% of doctoral students claim to be suffering from depression, and between 30% to 50% drop out of their project during the course of their thesis¹, the aim of this activity was to examine the question of well-being in PMMH, and to identify the problems encountered by doctoral and post-doctoral students in order to propose ways and areas of improvement.

The following report is thus dedicated to this study, starting with a section describing how PhD students and advisors define their roles in the course of a PhD project, paving the way for an analysis of the answers that emerged from the form as well as from the discussions in little groups, and finally concluding with how the future of research and of the lab is seen in the eyes

¹ Satinsky et al., « Systematic Review and Meta-Analysis of Depression, Anxiety, and Suicidal Ideation among Ph.D. Students ».

of the non-permanents.

With this analysis we hope to lay the foundations for an open discussion between permanents and non-permanents, keeping a constant improvement of the general well-being in PMMH in mind.

Some self-definitions

Reflections on the role of a PhD student, and that of a PhD supervisor

In the form sent to the members of the laboratory, two questions were addressed to all:

- **What is the role of a doctoral student?**
- **What is the role of an advisor?**

The goal was for us to understand what vision of their own work and education the young researchers have. We also wanted to ask them how they perceive the support they receive on a daily basis from their only real referents, their advisors.

At the same time, it seemed interesting to us to understand how these expectations are reflected on the side of permanent researchers: what are their expectations vis-à-vis their students, and how do they perceive the extent and limits of their own role?

In addition to the responses received via the form, we also proposed an activity during the CoDoc on the same theme. In 4 groups of 9 people, the students/post-docs had to ask themselves the same two questions (plus the questions "What is the goal of doing a PhD thesis?" and "What is the PMMH for you?"). Each group had to work on a single question and choose a representative to present their answer, imagining that their audience was a group of master's students looking for a thesis.

The elements resulting from this activity are not transcribed as such here, but the main ideas appear in the synthesis. The activity was also an opportunity to think about these questions in groups, after a personal form, to enrich our reflection and facilitate speech and identification. The objective was for everyone to be able to recognize themselves in the problems or positive elements, and to share their experience.

Roles of PhDs, post-docs and PI, as seen by early-career researchers

In this part, we aggregate the answers of doctoral and post-doctoral students under the denomination "young researchers" (30 answers), because the feeling delivered is not fundamentally different for these two populations.

The role of young researchers, by themselves

A vast majority of young researchers mention learning as an integral part of their role (20/30). In this context, they consider themselves as students.

A lot of them feel that they are also **the ones who "do" the research**, who produce the scientific results and who are the work force of the scientific world (11/30). They believe that they have a role, even on a potentially modest scale, in **advancing collective scientific knowledge**. In some cases, the emphasis is on the **production of scientific articles**, considered to be a major part of the mission of a

"Producing scientific knowledge while learning how to produce scientific knowledge."

a PhD student

doctoral student/post-doc (6/30).

The active role of a doctoral student, who can **generate ideas and make proposals**, is put forward several times (7/30). Respondents mention bringing new and personal ideas to a scientific project, developing independence as a future researcher, and being creative.

Conversely, we note that very few respondents see themselves as **having to follow instructions**, or respect precise orders. There are rare exceptions (2/30), like this young researcher describing him- or herself as "a robotic arm with mind".

While, as a general rule, the objective of "learning to become a researcher" is put forward (7/30 specific mention), several people insist also on **the importance of acquiring soft skills** (5/30) that are nevertheless useful in any professional environment, such as communication skills.

"[We are] the pebbles which are used to pave the road."

a PhD student

Finally, two ideas sometimes come up. First, the role of **knowledge sharing**, both through teaching and through events aimed at the general public (7/30). Then, a role within the laboratory, to get involved in the **animation of the life of the group**, or to help other PhD students/post-docs around them (4/30).

The role of an advisor according to their students

Almost all respondents mention **the notion of "guide"** to qualify the role of a scientific supervisor (21/30 specific mentions). We find there the idea of someone who accompanies "from a distance", without imposing her- or himself, by **proposing realistic research goals**. On the contrary, few people expect **very precise instructions** from their advisors, telling them "what to do" (2/30).

Many young researchers also mention a role of **opening/introduction to the world of research** (11/30): this may involve putting people in contact with other scientific teams, introducing tools or methods of research and writing articles. Overall, young researchers expect their advisors to help them become accomplished and independent researchers. Many also consider it necessary for PIs to be aware of the latest advances and trends in their field of research (7/30).

For several people (8/30), the advisor also **has a role to play in professional orientation**, by advising students on important career choices (whether this career is scientific or not). Finally, a few people (3/30) mention expectations for PI on a **human level, such as encouragement or praise, or the possibility of discussing personal problems** influencing the research work.

"[An advisor is] someone to discuss (crazy) ideas with, rather than just someone that you discuss your data with once in a while."

a PhD student

"[The role of an advisor is] to guide the PhD students in research projects with achievable goals."

a PhD student

If the expectations of post-docs are essentially common to those of doctoral students, it should be noted that specific elements are sometimes mentioned, with particular emphasis on **assistance for publication and the role of advisors in the human, practical and financial organization of the research team**.

Roles of PhDs, post-docs and PI from the advisors point of view

The role of students according to their supervisors

For advisors, the idea that the role of a student is to become an expert in his field comes up several times (4/11), as does that of learning research (5/11). This can mean learning to build a scientific project, from idea to realization, or learning to think critically.

Mention is made of the role of doctoral students within the lab, as contributors to the life of the group (2/11).

How advisors see their own role

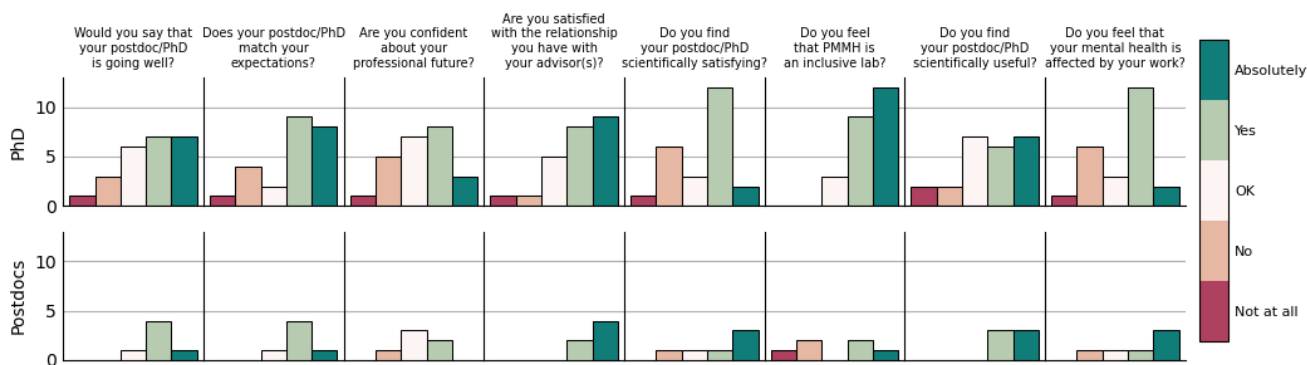
Several respondents answer that their role is to set up a research environment favorable to student work, by ensuring good working conditions (4/11). This concerns funding, technical equipment or access to conferences. Moral or personal support is also sometimes mentioned (3/11).

We note that the idea of a "difficult balance" comes up several times (3/11). Advisors question their supervision, so that it is sufficient without being overwhelming. A concern to leave the freedom to the students is apparent in the answers.

The life of PhD students at PMMH

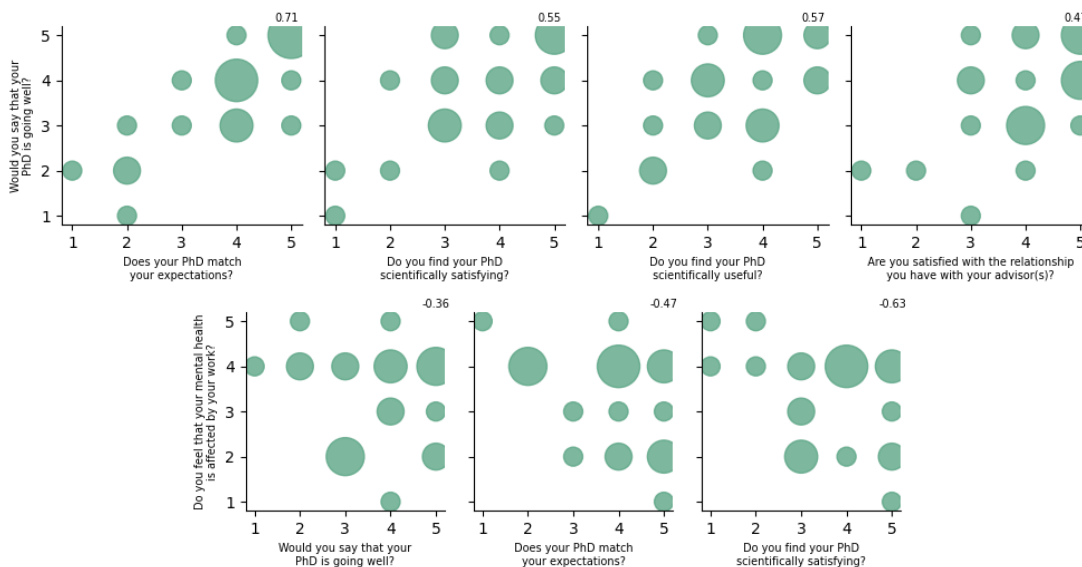
An individual point of view: answers from the survey

One of the main goals of this activity was to reflect together on the life balance and mental health of doctoral students and post-docs. In order to do that, we included some personal questions in the survey sent before the colloquium. The answers to this part of this survey can be found in the following histograms:.



Answers to the questions with fixed options in the survey sent before the colloquium.

The outlook is encouraging. Most people reported a positive vision of their life as PhD students or post-docs. However, there are some negative answers and the majority pointed out that their mental health has been affected by their work. This panorama is worth taking a closer look at.



Answers to the questions “Would you say that your PhD is going well?” and “Do you feel that your mental health is affected by your work?” as a function of other answers. The size represents the amount of points in that region and the correlation is shown on the top right corner of each plot.

In the previous figure we can see some answers plotted against others, showing the correlation between them. The results are not shocking. On one hand, people who reported that their thesis is going well also reported that they are satisfied with the relationship they have with their advisor(s), that they find their PhDs useful and scientifically satisfying, and also that their PhD matches their expectations. On the other hand, the ones who feel that their mental health has been affected by their work do not find their PhDs scientifically satisfying and it does not match their expectations.

Regarding the relation between the answers to “do you feel that your mental health is affected by your work?” and “would you say that your PhD is going well?”, even though the correlation is negative, we can see that there is not a clear tendency. Some answered yes to both questions, which could mean that their thesis is going well (they are having results) despite their deteriorating mental health. Another possible interpretation of some of these answers is that when their thesis is going bad, they feel a negative impact on their mental health and, on the other hand, when it's going good, they feel motivated and encouraged.

In conclusion, many factors have to be given together for the thesis to go well and it is precisely when these factors are not present that mental health is affected.

A second part of the survey asked about what do PhD students like the most and what stresses them the most about their thesis. Sharing ideas, being creative, learning and teaching were the main activities that came out in the first question, as well as having scientific discussions and doing experiments. Nevertheless, there are some issues that bring stress to the PhD journey. Several answers highlighted having the feeling of not being enough or not having enough results as a major stress factor. The short timeframe and the lack of results are also a considerable source of stress.

Motivation: why did we choose to do a PhD thesis?

As young researchers, we are doing (and some already did) a PhD thesis. Why? What is our motivation? As a playful way to develop our answers, we proposed to do, in groups, a top 10 reasons to do a PhD thesis and a top 10 reasons not to do it. In the following table we can see the answers that came up during this activity.

Reasons to do a PhD thesis

1. It's fun!
2. Learning, gaining knowledge and skills
3. Doing experiments
4. Freedom: letting your creativity free and having flexibility in time management
5. Professional growth and personal fulfillment
6. Being useful for the society
7. Way to keep doing research/ research topic
8. Teaching
9. Find solutions to complex problems
10. Opportunity for scientific conferences and meeting people

Reasons to not to do a PhD thesis

1. Lack of stable future
2. Low income
3. High risk of mental health problems
4. High cost for quitting
5. Pressure for results and to publish
6. Feeling alone
7. Absence of limit (work-life balance)
8. Length of the project
9. Difficulty of the project
10. Risk of being seen as overskilled while job search

Mental health in academia

A global challenge

Mental health problems are on rise among academics. It has been reported that graduate students are [more than six times](#) as likely to experience depression and anxiety as compared to the general population. This problem is not new and, on top of that, it has been exacerbated during the pandemic. There is an extensive bibliography on the subject, including [articles](#), journalistic [notes](#), and even [books](#).

Some independent groups of people started to advocate for a better management of the situation, principally by raising awareness. The initiatives take various forms such as [blogs](#), [podcasts](#) and [student associations](#). Nevertheless, there is still a stigma around this topic and the higher education institutions remain silent.

We aim to open the discussion about mental health in our lab, spotting the problems and seeking strategies to face them. In the following section we focus on the current situation among the non-permanent members of PMMH.

Situation at PMMH: we look out for each other

Most activities of Vie de Labo were organized in small groups to allow the exchange of experiences and ideas between the participants. This was meant to create a safe environment where people can express themselves without feeling ashamed or judged. The following activity took place just after the top 10 reasons to do and not to do a PhD thesis.

The participants were asked to think about mental health risks that happened during their thesis (or that they saw in others) and write them in anonymous pieces of paper that were collected later. They can discuss it with their groups or just write the papers by themselves. This flexibility in the dynamics enables the possibility of sharing with others if needed as well as pointing out something important anonymously (if the person does not want to say it out loud).

Seventy papers were collected and there were some common concerns that emerged. The first one was **workload, decorrelation between effort and results, and guilt** (21,4%). People reported feeling stressed due to the fact that the PhD does not work as they wanted, having the impression that they are not doing enough (or not having enough results or scientifically relevant ones) and consequently experiencing guilt because of it.

“Although the mental health risks for PhDs are well documented, we do not receive proper support to prevent mental health issues.”

a PhD student

The second one (with the same percentage) was **losing the sense of self worth and frustration**. People question themselves, feel too much pressure and when things do not go as expected they feel disappointed (which in some cases led to a lack of motivation). This concept is closely related to impostor syndrome.

Some pointed out the **relation with the advisor(s)** (17,1%) as a relevant issue. Lack of direction or guidance, combined with a sense of loneliness in case of conflict with the supervisors, are the predominant feelings on this subject.

Isolation (14,4%) also stands out as a main concern among young researchers. This topic unfolds in several aspects: feeling alone in general, cultural shocks (being alone in a new country) and solitude on the academic project (lack of help and support, loneliness in front of problems).

Another highlighted topic was the **work-life balance** (10%). Several people reported overworking, staying late in the lab (or working from home) and lack of sleep (which leads to fatigue and stress). They all agree on finding difficulties to maintain a healthy lifestyle.

The **financial and job concerns** (10%) also take a part in this discussion. Young researchers are worried about their current financial instability and their uncertain future.


Finally, there were a few papers (5,7%) with **general risks**, most of them involving explicitly mental health problems. There is a belief that students are “expected” to suffer during their PhD, and at the same time mental health is not treated as peer of physical health. Psychological support is usually expensive and there are no “check-ups”.

We are active members of the lab, and as such we can propose solutions and act as a support group. Facing the reality presented above, we wonder: what can we do about it? How can we help? Motivated by these questions, we gathered in groups one more time to think about possible solutions and propositions. This time the groups were not fixed; each one could choose the topic that they felt closest to. The goal was to identify red flags, find resources and propose solutions. The outcome of this activity will be presented in a poster format, listing the major pain points we were able to identify, and proposing axes for improvement, as well as reassurance that the young researcher is not the only one facing those difficulties.

A dreamed future for research & our lab

During CoDoc, two short activities were organized so that people could express themselves both on their future and on the future of the lab. The context was less formal than for other activities, thus some answers were made to be amusing. However, by looking at all the answers allows us to depict the way PhD students consider the future, as we are able to extract some patterns among their answers.

The first activity consisted in building a CV for imaginary people finishing their PhD now. To do so, participants wrote one line of the CV and then passed the CV to their neighbor (who couldn't see the previous lines), in a “cadavre exquis” way. Until the line 2030 of the CV, participants could let their imagination run free but for the last line it was asked that they write where they picture *themselves* in 10 years. The participants didn't know in advance that they would be asked about their future; the activity was pictured as a game. By doing this we tried to get the “first thought” about their self-vision in ten years; we were not aiming to create a big debate or a deep reflection. An example of a completed CV is given below.

	<p style="text-align: center;">Name : <i>Fernando HINOJOSA</i></p>
<p>Education</p>	<p style="text-align: center;"><i>Lycée agricole de St Etienne des prés. Master à l'université d'agriculture responsable de Lima, Peru</i></p>
<p>2019-2022</p>	<p style="text-align: center;"><i>PhD Thesis : Étude sérieuse sur l'aéroélastique du pont Neuf de Paris</i></p>
<p>2022-2024</p>	<p style="text-align: center;"><i>Elected researcher</i></p>
<p>2024-2026</p>	<p style="text-align: center;"><i>Présentateur de l'émission Kamoulox avec le fils de Danny Boon</i></p>
<p>2026-2028</p>	<p style="text-align: center;"><i>Try to sell drugs but wasn't fit for the job</i></p>
<p>2028-2030</p>	<p style="text-align: center;"><i>Solve the problem of how to live forever</i></p>
<p>2030-2032</p>	<p style="text-align: center;"><i>Becomes the director of PMMH</i></p>

Example of a completed CV during the activity.

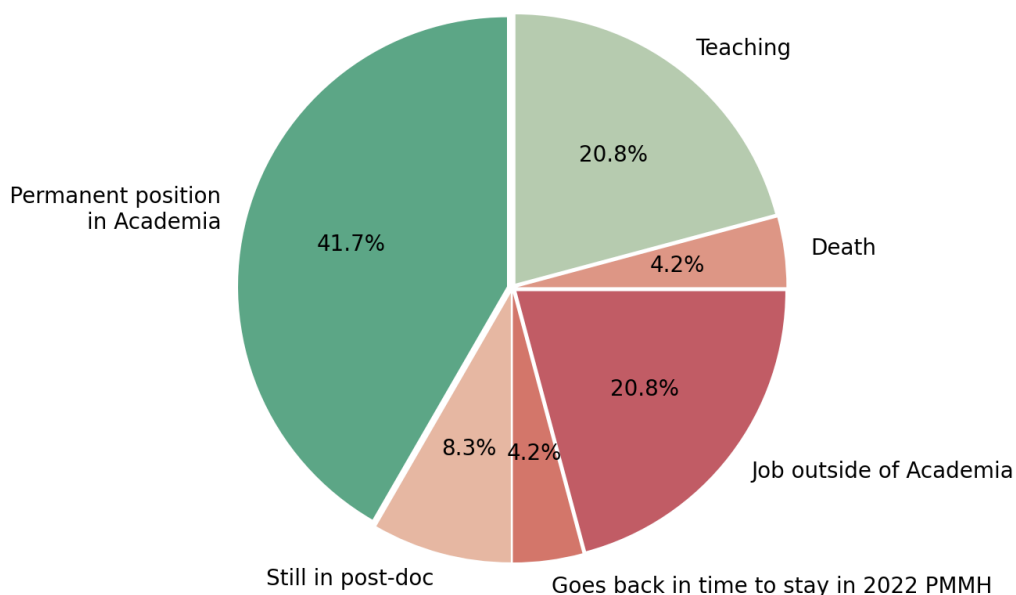
The purpose of this activity was, for the first part, to illustrate all the different possible futures for a doctor as pictured by current PhD students. And, for the second part, to get an idea of what PhD students want for their future as it will allow us to know, for instance, what is the proportion of PhD students who want to stay in academia or what kind of jobs they would like to do when they rather quit academia.

For the first part, imaginary PhD students ended up doing plenty of surprising jobs (ice-cream seller, president, musician, etc.), following more classical research paths (i.e. postdoc in a good lab, etc.) or having a good position in a company.

The vast majority of the answers were optimistic concerning the future of those PhD students. However, some CVs showed very negative events such as burn out (3 times), unemployment (1), homelessness (1) or even death (2).

Concerning the last line of the CV, participants had to describe where they see themselves in 10 years. Among the 24 participants, slightly more than half of them (13) see themselves continuing academic research while the other half follows other paths.

Among people continuing research 10 out of 13 think that they will have a permanent position. Some people even see themselves doing great research since one person wants to win an IGNobel and another wants to be director of the PMMH. The 3 others see themselves either in Post -Doc (2) or back in 2022 in PMMH thanks to the invention of a time machine.



Pie chart representing the way participants see themselves in ten years grouped by category of answers.

5 out of 11 people quitting research see themselves teaching at all levels going from Elementary School to High School. Others create businesses or totally change paths and become gardeners or astronauts for instance.

The second activity was more focused on the lab and consisted in drawing “The future of PMMH”. Groups of five persons were given an A2 piece of paper on which they could draw how they imagined that the PMMH would be in the future. The purpose of this second activity was to know how PhD students consider that the PMMH and research in general will evolve.

The most common pattern on those drawings was the geographic location of the PMMH. Indeed, 4 groups out of 5 depicted the precise location of the laboratory, one group thinking that the PMMH will go back to ESPCI while three others drew the PMMH in Jussieu owning the complete Barre Cassan. Finally, the 5 groups pictured the future of PMMH as more open to minorities, less harmful for the environment (recyclable equipment, zero emission cars, etc.), welcoming and with more equipment for conducting research (especially microscopes), as well as nice activities such as CoDoc being organized.

Conclusion and perspectives

As a whole, as far as the PMMH is concerned, we were able to see there was an overall positive feeling about life in the lab: it is seen as a positive, enriching, inclusive workplace in which it is good to work.

The activities in little groups during the “Vie de Labo” confirmed this, showing a willingness to listen demonstrated by all the participants, and an active desire to find solutions to the concerns of the others of the group, proofs of the support and solidarity existing amongst PhD students and postdocs in PMMH.

However, even though the PMMH is an exceptional place to work, the “Vie de Labo” activity made it possible to identify certain common issues, such as a difficult-to-handle workload, feelings of guilt, the losing of self worth, strained relationships with advisors, or isolation, amongst others. These are common occurrences in PhD experiences, and demand our most focused attention : while being an exceptionally enriching experience, a PhD can be a difficult one, and it is of utmost importance to work towards making it as worry free as possible.

“PhDs are supposed to be difficult”, “The harder it is, the stronger you get”, “I went through it this way so you will do the same” and many other such sentences describing the PhD experience are, we believe, sentences to ban from our everyday thoughts. Contrary to the desired effect -which we assume is to get the PhD student going harder and faster- , this only propagates preconceived ideas that are not healthy either for the doctoral student or for the future of research.

It has been shown many times how beneficial a healthy work environment is for the quality of the output, and we truly believe this applies to research too. It is a beautiful thing to be working towards a better understanding of the world around us, but no matter how beautiful research is, bad working conditions spoil even the best of jobs.

Thus, we hope the above report will constitute a first stepping stone to move towards freeing speech, and opening up communication about the current state of research, and more specifically about the PhD experience.

Furthermore, we hope to have conveyed the importance of organizing such initiatives as this “colloquium for non-permanents”, which made it possible to take stock of the situation without pressure, and also allowed a bringing together of doctoral and postdoctoral students, bringing support and comfort to those who needed it.

We hope this document will also be the occasion to find areas of improvement, and practical approaches that can be put in place so as to work towards the betterment of the PhD experience, such as our initiative to draw up an initial tentative solution in the shape of a poster which we will make available to PhD students experiencing difficulties, to offer them possible remedies to their problems.