02/05/2023 - **Intro Junior research lab**

Group dynamic, introduction to materials and facilities

O papel deles é mais relacionado ao bom funcionamento do grupo e algumas das aulas

Environmental, molecular tool,

quantitative geneticist, theoretic

environmental gna to explain

* **Research project** - means we are working on our own (200 hours out of the 8 weeks)

We are expected to lead the project with some guidance/context,

Finding the question to be explored, around 2 weeks - introduction of the project

To be as creative as possible, working together

Escolher e encontrar a pergunta para a qual queremos encontrar uma resposta

Can be experimental, we should design it by ourselves

What kind of experiments can we do?

* Scientific report - similar to a paper

DEADLINES

17/05 - Trabalhar na introdução com uma professora, levar a introdução o mais desenvolvida possível, a partir dessa sessão teremos a autorização para começar a trabalhar no projeto

24/05 - Metodologia, o **porquê** (parte mais importante) de estarmos fazendo isso, expectativa dos outcomes, e como pretendemos lidar com eles

27/05 - First version of the article - ler o paper de outro grupo e criticar

28/05 - Implementar correções baseadas nas críticas dos colegas e entregar revisado até meio dia

International lunch

Meetings on a regular basis with the supervisors, at least once a week some sort of contact, getting insight on what we are working

Sprint review every week 2 - 3 pm

Next monday - holiday day off

18 e 19/05 day off

29/05 day off

Second part of the morning

Slack - software to communicate with tutors and colleagues, share links, create channels dedicated to our groups. Comunicação por lá, não será por emails,

Tomorrow: class by morning, finish working on articles in the afternoon

Thursday

Lunch and discussion on the bibliography

3 pm meeting with Véronique,

First article on resistance to the virus

03/05/2023 - **Managing the research project**

What is managing the project: Planning of activities and schedule (deadlines), collecting data, budget, team work. Resources to get derivables (objectives)

Scientific project: tem que ser reproduzível, has to answer a question, diferença de outros tipos de projetos é que pode ser necessário mudar a pergunta para a qual buscamos a resposta ao longo do trabalho

**Agile project management**

**Traditional project management** would use resources such as gantt graphics and follow well established steps, it’s the project manager’s job to adapt and change the steps of the team's work as new topics emerge and need to be dealt with. The drawbacks we pointed out were: rigid and top down approach, being time bound. In contrast some colleagues remarked that it is a common and easily understood method, also it has more structure than more flexible methods.

**Toda semana teremos uma project manager,** qual é a da semana?

Comparison: With the **Waterfall** approachthe steps are set and follow as such: analyze, plan, design, build, test, deploy. For the **Agile** approach we start by analyzing, followed by the planning step, to then fall into a cycle of designing, building and testing, to then deploy and restart the process of analyze, plan, cycle of design, build, test, and so on. That way we can present the customer and or supervisor during the sprint

**SCRUM**

**Backlog** - activities that need to be done to fulfill, the group must agree on the vision

**This morning**: list all the things that need to be done - build the backlog, once we have it we can plan the sprint

Quero focar nos objetivos e resultados dos próximos trabalhos e caso tenha tempo descrever melhor o

5 minutes daily scrum while standing up to say what we are going to do

Retrospective at the end of the day to go through what was done, what was good, more or less efficient, talk about the way we are interacting

Write a **report/review for the sprint** - create a shared doc on the folder

What and I we did it

10 minutes to present

2 a 3 slides - o professor vai passar instruções nesta tarde sobre como fazer o sprint review

Roles:

Product owner - owns what is desired and why

Scrum master - keeper of the scrum process and facilitator

Scrum team members

11:20 exchange between teams

Tuesday 02/05/2023 - Introduction to the course 9-12 am, division of the articles, reading and summarizing 3 hours

Gláucia

Júlia paçoca

Júlia

Giovanna

Bruna

How soil physical characteristics may affect the soil’s infectious potential?

How can different practices within the farm influence soil infectious potential?

Irrigation, soil tillage (linked to depth of fungi findings)

04/05/2023 - **Literature survey and management**

Sites de acesso à informação: scholar google, web of science, scopus, pubmed science, research gate (kind of like facebook for researchers), twitter (most used by scientists for network), cab abstract

It’s hard to proliferar the virus, using rabbits

monoclonal antibodies allow to recognize one epitop - nowadays molecular methods are used

we dispose of antiserum “homemade serum” - Lab Arcade where we work on genetics, not on the campus of montpellier SupAgro Lavalete, we can also buy it

test takes 2 days: sandwich bc its between 2 layers, one of antibodies, then we put the juice,

we can incubate for one night or more, like the weekend for example

second layer of antibodies linked to an enzyme, degrading the substrate, the product is colored in yellow, then we measure the intensity of the collar yellow, measurement of the absorbance

use the same variety, have a healthy plant for control group, wheat or centeio

Silvain - works with molecular biology methods, PCR, busy man.

Saint Aunes

We have a service car, the teacher can take us

What is happening in the roots is not clear,

The resistance is to the translocation of the virus from the roots to the leaves

Working with Arvanis - technical institute

We can test what has already been tested, soil samples in room temperature, stem samples.

review the membranes - compare the classical detection by ELISA,

virus sensitive to temperature, it's important to work with ice

It is complicated to inoculate due to the virus sensibility to temperature

looking for the resting spores

At the lavalete building there is a project on P graminis transmitted viruses, there is a group that works on it with rice, and a partner in Belgium they are the best in Europe to handle this virus, they have already sequenced another specimen, we can ask them for suggestions. One of the girls is a teacher on the subject

testar com elisa nas amostras remanescentes

can we make the infectious potential go down by cultivating

are there

the belgium team has the antiserum for P. graminis

alguém já contou o número de zoósporos

14h Building 8 and 9 - meet at the bottom of the stairs

Contact Silvain around the middle of the week when we have the results back from our tests on the samples

09/05/2023 - **Data management**

République numérique, french law for data sharing without restrictions.

Oncologist nyu med school Judy

B cell function Use the data for pancreatic cancer, even though he is not an oncologist, everything you need to know is in the article, will you share? NIH fuhnded, on pub science so he was obliged to share, saved on usb drive, that was the only copy, hexadecimal, she cannot read it, cytosynth

**Metadata**, data that explains the data

Current storage of data

Google drive

Zotero

Letters and number to identify individual spots

Primeira coluna nada e os valores são desconsiderados

2 wells for 1 sample

2 AB, 2 CD, 2 EF - ordem que ela coloca as amostras

material para 5 testes

particular plastic that can retain the proteins, the buffer for the first layer of Tp coating (tampão, buffer) is very important because its what holds the proteins.

Prepare buffer PBS 5x

1st layer

2nd layer virus  
3rd layer antibody linked to the enzyme

Materials

Two 1L bottles

1L water

4 1L bottles

Tween PVP\_ovalbumine

Immuno print

pH go down with solution

[guillaume.satger@supagro.fr](mailto:guillaume.satzer@supagro.fr)

Tp coating

Collect samples

Check in the resting spores how many of them have the virus

Simultaneously collect plant samples from

collect resting spores from the roots

check in

can we quantify the amount of rna on the sample to know the quantity of virus?

q PCR

hypothesis: More sand = less fungus = less disease?

physical characteristics

would it possible to collect samples from multiple farmers

depth

soil sampling in different parts of the field

0 - 20

20 - 40

40 - 60

presence of p graminis

quantity of p graminis

presence of virus

quantity of virus

2 repetitions x 3 depths

6 per sample spot

4 spots = 24

Look up

quantify the amount of spores -

different depths

12/05/2023 - **Sprint review**

Indira was the scrum master

* We need Jacques and Sylvain’s feedback on availability of materials to implement the tests
* Communicate with the farmer to set appointment for meeting
* Improve task division

Write or phone the farmer - Jacques might not know him very well, contact the person who is retired

hypochlorite acid

take soil samples from different depths of the soil

looking at resting spores

PCR

qPCR

we try to do the same for the virus

discuss extracting nucleic acids with Sylvain - can we make only one extraction or

nucleic acids, target is DNA

primer to amplify polymyxa graminis

Virus has RNA

PCR the target is DNA

so we have to synthesize cDNA complementary

using specific primers - hexamers - specific primer of 6 nucleotides

advantage of this method is

Protocol

Send to a private lab

Prices

Team that works on soil - doesn’t know if they make analysis

Could be easier

15/05/2023 - **GitHub**

Software focused on version control, works locally, meaning that it’s on a specific device. It