TEAM MEETING

NOTEBOOK

iGEM CONCORDIA

Team Meeting Minutes

10/04/2020

Lancia, Gabe, Paula, Evelyn, Nhi

- How is everyone?
- Toulouse
    - How did our Feedback help them?
    - AstroBio bio
- Deliverables:
    - HP transcripts
    - Inclusion content- Paula is on it as well as other HP content
    - Brian to send contribution sentences
- Software/ GitHub
- Primers ready to order next week

09/27/2020

- Everyone please put your references in APA format and add wiki (web) coding as follows: Authors (year). Title. Journal Name, Journal Volume</I>(Journal Issue number). Doi: add doi number only here not link

- Deadlines
    - Final Track selection - October 2nd- done
    - Final team Roster- October 2nd - check admin end
    - Testing Day - October 7th
        - Teams should plan to test the following things today (if not done already): editing your Judging Form, editing your Wiki, creating Part pages on the Registry (if applicable), and uploading content to GitHub for Software Track teams and any teams creating new software tools this year.
    - Team project Title and Abstract Freeze - October 9th - done
    - Final Judging Form due - October 23th - Paula sending email
    - ~~Registry Pages Freeze- October 27th~~

        - More info : https://2020.igem.org/Competition/Deliverables/Part_Pages
    - OCT 27th
        - WIKI FREEZE - October 27th
        - GITHUB/ Software freeze
            - By this date, you MUST have a GitHub **repository** within the **igemsoftware2020 github page** and you MUST have created a GitHub **judging release** of your software. (Maher on judging release)
    - Team Video Presentations due - October 30th **(11:59AM EDT)**

- Wiki
    - Team attributions form [doc link]
    - Mentors Bios [doc link]
    - Proposed Implementation
        - Corey Nislow - NASA
            - Dr. Nislow
              "Will you be linking to the NASA GeneLab database? Basically all omics data is put in there. It's typically a governmental site. It's not as user friendly as yours is, but It might be a very nice way for you to get more eyeballs on your data and your database."
        - Denis Legault- highly curated
            - 'Having a subset of high quality data that can be validated, is worth something. There are pools and pools of poor subsets out there. It's a service- your clientel may be very small- but if you can offer something of quality it will be very much appreciated.'
        - Richard Barker (Expand beyond NASA) &
        - Morgan Irons wanting to grow the microgravity community
            - That's something that I've been working on with going to these conferences and giving these talks and everything. It's not only to start these conversations but to connect myself with researchers who have been doing similar research for years now or are new students who are interested in starting this research and it's the first time they're really hearing about this again, because there's really nothing there that connects everything together. So I think a database like this, not only would allow open access to this research, but also could be used as a way to connect these scientists together and see, okay, these people have done this research.

              I should contact them to learn more about what they did and see how I can bounce off of their research and continue their research moving forward. I think this is a wonderful idea for data access, as well as the networking opportunity.

        - Have Macauley test the software
        - https://2020.igem.org/Judging/Medals (Proposed Implementation Criteria)

        - Mini Jamboree Judge for dissemination of AstroBio

- Mini Jamboree Feedback [doc link]

- IDT 20kb
    - October 13th
- Toulouse
    - Feedback for Software
    - Bio
    - Partnership
- Michelle Oeser Wednesday, Toulouse at 10am
- Hardware
    - Optimum Temp 30C- 37C
    - 60 rpm Random Positioning Machine: variable
        - Look at Moon & Mars gravity simulators (Lancia)
    - Lab bench dimensions as a reference:
        - Bench dimensions are (DO NOT use the whole space):
            - 230 cm width
            - 45 cm height
            - 60 cm depth
- Hardware Research (Gabe, Natasha, Nhi): [doc link]
- Bioreactor Research (Brian): waiting...

09/20/2020

- Wiki
    - Transcript assignments will be sent out this week. Due September 30th
        - Richard Barker- Natasha
        - CSA- Brian
        - MacAuley- Nhi
        - Potvin- Gabe
        - Morgan- Labrini submitted
        - Hilde- done (Lancia)
        - Scot Bryson (in review)
    - Social media summary- organised stats in graphs- Evelyn
        - Before and after
        - Demographics
        - Mars photos- team
            - https://mars.nasa.gov/mars2020/participate/photo-booth/

- Hardware = Genetics
        - DUE: Saturday the 26th

- Read papers on yeast in microgravity and make notes of specifications we can forward to the Capstone teams and our hardware team
    - **Microgravity Simulator team- Gabe, Natasha & Nhi**
        - In an Excel Sheet
            - Split up papers, don't review the same ones
            - Machine used
              [RWV (rotating wall vessel)/ HARV (high aspect ratio vessel), 3D Clinostat/RPM-random positioning machine…]
            - Temperature
            - Rotations per minute (rpm)
            - Other specifications/ considerations- very important, what do we need to have successful experiments?
            - What was the study for/ about (1-2 sentences)
            - Link to study and reference in APA format (min 3 studies each)

    - **Bioreactor team- Brian & Lancia**
      For yeast SMG. *Some options*
      RCCS (rotary cell culture system) or equivalent, HARV with bioreactor, 3D Clinostat with bioreactor, RWV (rotating wall vessel with bioreactor)
        - Split up papers, don't review the same ones
        - Temperature
        - What are the nutrients? YPD
        - What is the flow rate
        - Gas exchange
        - Is there a membrane between the yeast cells and the nutrient flow? How are the cells isolated from the flow?
        - Which seems better for our purposes and why? (min 3 studies)
        - Other specifications/ considerations
        - Link to study and reference in APA format (min 3 studies each)

09/13/2020

- STEM Fellowship Publication
- Mini Jamboree Registration: [link]

    - Slack: [link]
    - Presentation [link]
        - Next week! Keep it simple, not much time for review
        - For Giant Jamboree- split up slides, everyone who wants to, presents a bit
- Next : Video for Giant Jamboree
- Inspirational video done- great work Amin! (Lancia sent small edits)
- Wiki Freeze Oct 27- Hajar, Grecia : coding & content
    - Paula- content
    - Lancia- content
- APA for citations
- AstroBio- GitHub Freeze? Oct 27th
    - Maher uploading software to GitHub
- Poster: November
- Track Selection

1:	Information Processing
2:	Open
3:	Foundational Advance

    - → change to Software

09/3/2020

Present: Paula , Brian, Samman, Evelyn , Hajar, Labrini, Natasha, Nathaniel, Gabe , Nhi.
Absent: Maher, Ben,
On holidays: Lancia

- New meeting times
    - Sundays 2pm to 3pm

- Video Shooting for iGEM - Mini jamboree `
    - Who would like to be there?
        - Everyone - except for labrini
    - Dates- When2meet. - Deadline for the video before the mini jamboree
        - September 12

        - September 13

- In person activity ?
    - October 3rd- to plan
- Science Slam September 26th.- No
- Interview Proofreading:
    - Use the 'Comment' function to highlight any misspelled words or doubles, aka *'of the of the'*
        - Canadian Space agency [Brian]
        - Dr. Laurent Potvin Trottier, UConcordia [Gabe]
        - Hilde Stenuit of Ice Cubes Services Space Applications
        - Macauley Green, Nottingham Astropharmacy
        - Richard Barker, NASA, CoSE [Natasha]
        - Scot Bryson, Orbital Farms [Nhi] - sent Aug 27th
        - Morgan Irons, Deep Space Ecology [Labrini] - sent Aug. 27th*
        - Dr. Corey Nislow, UBC, yeast in microgravity [Evelyn] - Sep 2
        - Karen A McDonald & Aaron Berliner
- Wiki
    - Assign tasks
- Genetics
    - Primer design done
    - Looking into making the guide RNA and protocols
    - Wiki content
- Software
    - Table formatting
    - Make it more user friendly.
    - Testing the database.
        - Paula, evelyn , grecia.

08/28/2020

Present: Gabe, Natasha, Nhi, Evelyn, Brian, Labrini, Lancia
On holidays: Maher, Hajar
Tech difficulties: Paula

- FORMS
    - Feedback form for team

        A reminder to pretty please fill out this ***anonymous*** **2020 team** feedback form (no personal information is collected):
        [doc link]
    - Meeting form for meetup: [doc link]
    - Register for event
    - CSBERG- workshop/ registration

        - Individual member registration: [link to register]
- Next year commitment
    - Brian- interested in a leadership
    - Evelyn- Social Media, Genetics
    - Gabe- Research colead
    - Natasha- Genetics
    - Nhi- Genetics, Software, Hardware (competition)
    - Labrini- Graduating
- New meeting times
- Interview Proofreading:
    - Use the 'Comment' function to highlight any misspelled words or doubles, aka *'of the of the'*
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        - Dr. Corey Nislow, UBC, yeast in microgravity [Evelyn] - Sep 2
        - Karen A McDonald & Aaron Berliner
- Toulouse game testing- who?
    - As part of gold medal Partnership we are testing the first draft of the videogame Toulouse has made. Available on this link: https://arnobruel.github.io/Jeu-video/ .
    - A lot of things in the storyline will be changed but let's think of it as a Demo, or an alpha-release
    - Put your feedback here: [doc link]

08/21/2020

- Next friday, 3pm optional meeting to discuss how growing the team will proceed, recruitment & Code of Conduct
- Toulouse→ *Partnership*
    - Focus on microgravity document
      50 Toulouse (bionutrients) / 50 Concordia (SMG/ microorganisms in space)
    - Feedback for Software 50/ Testing for Video Game 50
    - Translation 50/ 50
    - Experiments?
- CSU 3500$ woot
- Software→ going well
- HP→ working on wiki, all projects going well
- Social Media→ Monitor the reach of our sci com

- Question we need to know how to answer- What are you doing?
    - Go in with one application and then can tell there are other applications.
    - To produce bionutrients optimally in space.

08/04/2020

1. 4th Space- register [link]
2. Break out rooms: [zoom link]
3. promotional video: https://www.youtube.com/watch?v=7KdAbDHpK7M&feature=youtu.be
4. Attributions doc: **Asif [doc link]**
5. RTTA #3 (Grecia, Amin, Evelyn) Monday in the Slack channel
6. Wiki
    a. Yeast→move
    b. Implementation→ move
    c. Promoter selection
    d. Proposed methods & experimental approach
    e. What's a reporter strain
    f. How does it go into yeast
    g. Adaptive evolution
    h. Proposed Implementation hyperlink
    i. Hyperlink to Toulouse experiment

08/04/2020

Anna:

- Brady bunch video
- 4th Space hosts the Mini Jamboree Sept. 19 & 20, 11-4pm NO
- Zoom:
    - Can you run a webinar Zoom with a QnA button?
    - Capacity
        - 300
- Listing
    - Make and link to Eventbrite
    - Google integration for the listing?
    - Can we have an option to add questions that 'is optional'?
    - Poster & Mini video trailers/ promotional video for Monday

- Space Concordia:
  VP Special Projects:
- (deals with non-division projects)
- Lead of Space Health Division:

Team

- Save the date Aug 19th & Sept 3rd at noon
- Project: 4 weeks to go what is the **priority**
    - Software
    - Genetics
        - primer design
    - Hardware
        - Loose idea and timeline for next year is okay. Not a top priority.
    - HP- Integrate
    - Collabs
        - Toulouse
            - Experiment (this week)
            - Microgravity doc (this week)
            - Translations
            - Design primers for their promoters
        - UCalgary
            - Bioreactor
            - Translation
            - Promoters

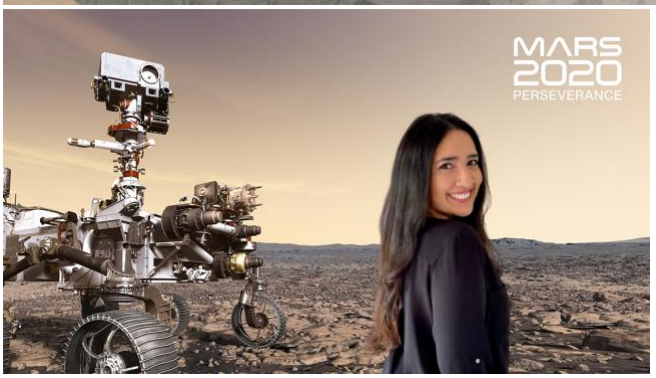
- WIKI
    - Graph for industry applications and market amount in dollars- show the need
    - Genetics
        - [doc link]
    - Software → Engineering Success

Silver	**All Bronze criteria must be met, plus all Silver criteria must be met**		
Number	**Name**	**Explanation**	**Guidance (New for 2020)**
1	**Engineering Success**	Demonstrate engineering success in at least one aspect of your project. This achievement should be distinct from your Contribution for Bronze. Required URL: 2020.igem.org/Team:YourTeamName/Engineering	*Engineering success can be achieved by making an effort to follow the engineering design cycle: Research → Imagine → Design → Build → Test → Learn → Improve → Research...* *• We invite you to think about ways to tackle and solve one or more of your project's problems and use synthetic biology tools to generate expected results.* *• If you are unable to get into a lab, how would you design your experiments, evaluate the outcome, deal with unexpected results, and plan further steps?* *Notes:* *• For teams who can get into lab, you can design and build a new Part and show that it works as expected (documentation must be on the Main Part Pages on the Registry)*

    - Human Practices [doc link]
- Vote mentors in
    - Steven Li

07/29/2020

New Code of Conduct passed



- https://mars.nasa.gov/mars2020/participate/photo-booth/

- Drive is almost full. Will clean out past years. Make sure you have backups
- Code of Conduct changes: [doc link]
    - Voting
- CSBERG registration
- Whentomeet for RTTA 3

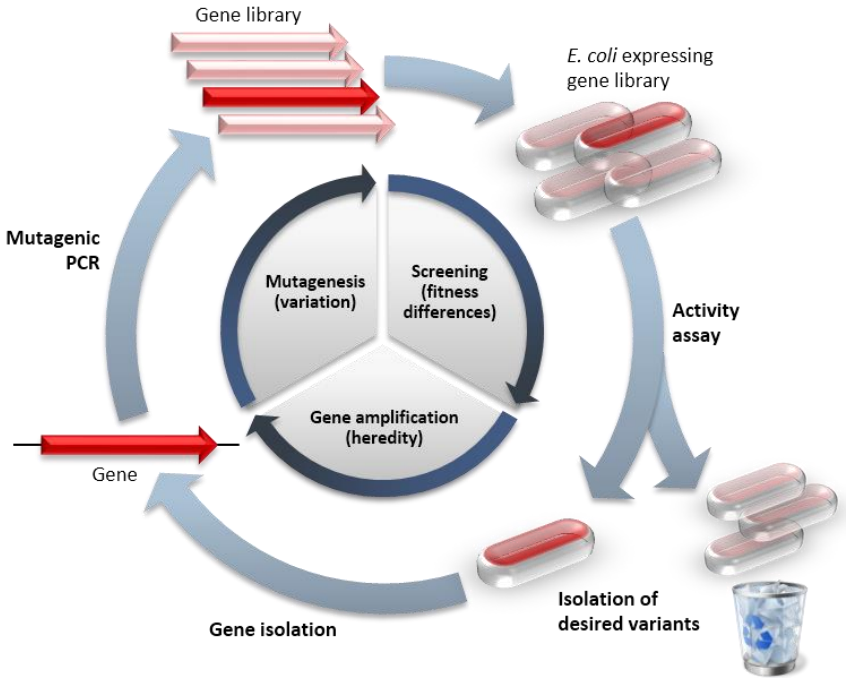
Be proud of everything we've done!

Subteam updates:

- Genetics
    - Our Promoters!!!!
        - **GAL 3 - Vit A Toulouse**
        - **GAL 10 - Vit A Toulouse**
        - **HSP 30 - heat shock**
        - **OXR 1 - oxidative**
        - **OPI 10 - DNA replication stress**
        - **SAF 1 - Nutrient Signaling**
        - **RAV 2 - ATP-ase RAVE complex**
        - **BTN 2 - snare**

        - Maybes:

- TDH1 - Vit A Toulouse
- COS8
- DSC2



Directed Evolution:

Instead of designing the protein (which requires in depth knowledge of the structure and function)

Site-directed mutagenesis:

PCR insertion, deletion, substitution, primer extension, inverse PCR

We know the gene and its interactions in the cell and can target **that particular gene** to make changes that we believe will have a favorable outcome.

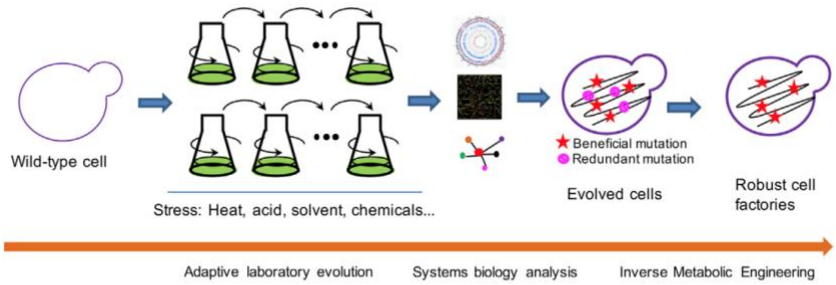


Figure 2. Adaptive laboratory evolution for engineering robust cell factories with integration of systems and synthetic biology. Adaptive laboratory evolution of wild-type cells enables rapidly gain robustness against different or multiple stresses. Then systems biology analysis elucidates the genetic mechanism or genetic targets that contribute to the tolerance. Finally, the beneficial mutation can be re-introduced to wild-type or other engineered strains by inverse metabolic engineering.

Adaptive Evolution: applying one or many external pressures continuously. In our case microgravity and selecting the ones that acquire tolerance over time. *The whole organism is affected.*

Imagine a bird population is pushed out by competitors and settles in a new habitat scarce with plants, but with lots of long, hard seeds instead. Over time the beak becomes elongated to get at those seeds let's say, but the birds that survive may also adapt a different stomach structure due to a change in diet, and even a change in feathers if it's warmer.

We are mimicking this natural process. Evolution due to external stress which affects the whole organisms. We are accelerating the process within our yeast.

- Social Media
    - Personalizing the instagram influencers message
    - direct messaging on insta

What's coming up/ perspective

Next week:

- 4th Space joining the meeting to do an intro video
- Bios up on wiki, project description updated
- Bronze medal done
- Grecia Database/ Software Process
- Astrobio Front End
- Inclusion contacts sent & follow up. Meeting Monday?
- Contacting yeast researchers
- Promoters chosen
- Lots of social media followers & all that magic
- JulyGEM video→ share with Promega
- Clinostat meeting Monday: Ruben? Time?
- Speakers for 4th Space esp. Aug 19th
- Toulouse meeting: perform and record software review
- FundONE up hopefully (Lancia)

August Week 2

- Fellowship meeting as Genetics review with Dr. Kachroo? (Orly away)
- CSA interview. Have materials prepared
- Determine experimental design in Genetics
- Week before 4th Space talks. Finalize format and roles

August Week 3

- RTTA review
- 4th Space Talks & Programming

07_23_2020

- JulyGEM pitch woot! Go Hajar!

- Please add a photo on your Slack and zoom profiles, so we can say Hi if we ever meet in person! The mentors are doing this as well.
- RTTA
- Inclusion: Spoke with Anjali Agarwal, Gina Cody is writing us a letter of support for our initiatives, good feedback, she thinks we are doing great!
  Set a voting committee and quorum for votes. Absentia (yes, no, not counted)
  Transparency in recruitment. Rubric and all recruits are sent their results, accepted or not.
  8 ppl present for a vote to occur, 6 active votes minimum (ie if two absentias which do not count)
- cGEM registration:
  - Hi **@channel**, the cGEM Conference team is happy to announce that registration for cGEM 2020 is now live! [link]
  - Please register and join the cGEM 2020 conference slack channel! [link]
- 4th Space week long:
  - Brian? 5-10sec pitch
  - Link to slideshow

Team updates: around the room, video on when you speak
If we haven't covered everything do subteam updates:
Fundraising/ Corporate

- NEB submitted, two items
- FundONE follow up with Sophie
- Take down GoFundMe, try Experiment.com
- Clinostat sponsor contacting for printing
- ISS, Boeing for sponsors and Clinostat
- SAF funding sent out
- CSU budget
- No companies with 3D Clinostats, looking at Universities (Grecia) Proton-Whitney (sp?)

Social Media

- Working on folders for instagram
- Contact Grecia

Software

- Great feedback, third version up and running

Genetics
Human Practices

- Lots of interviews, we have learned A LOT
- ULaval 4th Space event organised
- Inclusion project, channel #inclusion & STEMpal program, community organisations in Canada, Katalis (potential), immigration community group (Amin)
- Mini Jamboree Sept.25/26

07_16_2020

1. JulyGEM registration & Slack
    a. Change your name to Name (Concordia-Montreal)
    b. Slides- to be updated.
        i. Add 2024 SpaceX/ mars...
    c. Pitches and voting
        i. Those present voted announce tomorrow
2. Sam- register on iGEM
3. Sticker request sent (Gabe)
4. Women in STEM social media vote & discussion YES
5. Check in with team representation, if you feel we are underepresenting *anything* let us know and we will add it to our Human Practices
6. RTTA Overview & Assignments
    a. [link]
7. Name Brainstorm
    a. Pen Pal
        i. STEMpal
    b. Software
        i. AstroBio
8. Subteam Updates
    a. Genetics
        i. Promega grant due tomorrow
    b. Software
        i. Software search format
            1. Organism (Human, Yeast, Bacteria)
            2. Species
            3. E-GEOD
            4. Gene Symbol
            5. Regulation (Up,Down,Unaffected)
                a. Can we add All? (Lancia)
            6. Platform ORF
            7. Study Type (HARV, RPM, Parabolic-flight,Spaceflown)
                a. Can we add All?
            8. Assay Type (Microarray , RNAseq)
                a. Can we add All?
        ii. Morgan Irons: 'Great way to connect researchers' (Lancia)
    c. Social Media
        i. Has everyone submitted? (lancia) submitted the excel assignments? (Evelyn)
        ii. Selfies at work will be release today as a story

d. Wiki
    i. team page done by end of next week.
    ii. Mentor bios
e. Fundraising/ Corporate
    i. NEB/ Eppendorf, waiting for Genetics Team. Next week :)
    ii. SAF- confirmed received
    iii. Amino Bios sponsored us for the kit
    iv. Gingko Bioworks
f. Human Practices
    i. Karen McDonald of CUBES Friday at 11am. These things make the project fun!
    ii. Morgan Irons- amazing human being
        1. Genetics input: seen other microbiologists and finding that moment where that change happens. Collect sample and freeze it over time and do DNA testing on the samples to see if there are changes in the genome. (Said directed, mean Adaptive evo) Gives ability to go back in time.
        2. Everything I do and we do with the thought of inclusion in mind, realising that just like an ecosystem is more stable and resilient and amazing with biodiversity, having a diversity of ppl and experiences and opinions can help you enrich the environment and help you come up to solutions you would never think of.

07_9_2020

Present: Samman, Amin , Brian, Asif, Evelyn, Labrini, Maher, Natasha, Nhi, Paula, Khash, Grecia, Hajar.

1. Promote our Project- mandatory
2. Fun time

DUE July 15th

As part of the team, one responsibility is promoting our project! The following 7 tasks are due July 15th for each team member:

1. **Share Molecular Cloud posters on your accounts and tag iGEM Concordia**

    a. Download the raffle posters here: [link]
    b. Post your individual Molecular Cloud poster, that Hajar made, to your private social media accounts

2. **Get 10 Molecular Cloud votes from friends and family-**

they can win a prize! Ask them to vote for us. We can win $$$

3. **Share our Promotional video on social media:**
   https://youtu.be/qLqqzOerQv4

4. **Send one or more 'selfies at work'** to Evelyn for social media.
   We need faces on our accounts!

5. **Follow our Facebook:** @iGEMConcordia
6. **Follow our Instagram:** igem_concordia
7. **Follow our Twitter:** @iGEMConcordia

July Gem speakers: Brian/Hajar/ Paula /ask Ben and lancia.

Game Time!

07_02_2020

All team members will speak about their contributions from now on cause we like to hear you :)

1. Welcome!
   a. Learning experience, ask questions, try things out
   b. Tell us about yourself
   c. Have you connected with your subteams?
   d. Code of Conduct-Grecia
   e. Any questions?
2. Housekeeping
3. Subteam Updates

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1. Welcome!
2. Housekeeping:
   a. Last chance- you are expected to know how to use:
      i. Slack
      ii. Google Drive
      iii. Google Calendar- or know when our meeting times are
      iv. Zotero
      v. Benchling

If you don't ask, ask, ask, ask, ask, ask- it is very easy to do a walkthrough through screen share.

b. Google Drive is linked to Slack but associates to personal Drive. Link your own Google Drive here: [link]
c. Zotero- all project related papers, everyone should be a member. Check your inbox- search 'Zotero' for the invite.
d. iGEM Registration
e. Judging forms/ Video Deliveries

3. Subteam updates:
    a. Software
        i. Yeast data gathering almost complete (Ben)
        ii. Currently working on having up-to-date yeast data in DB
            1. 5 gen (not all studies included this)
            2. 25 gen
            3. Meta-data
        iii. Work with Hajar and Grecia to plan for the front-end design and development
        iv. AWS account activated, created instance and accessed cloud for testing
            1. EC2 instance
            2. Ubuntu OS
            3. S3 is optional, probably will stick with mongodb
    b. Genetics
        i. Lancia is now lead.
        ii. Benchling for all gene/ promoter research. Use the template for notes (see genetics channel)
        iii. Using the database from Software to look at genes with lowest p-value and highest change in regulation. Genes which are not affected by too many other factors- fewer connections with pathways, not affected by other stressors such as salt content or pH
        iv. Promega list…
        v. Reporter with and/or gate, need distinct signals

    c. Fundraising & Corporate
        i. FundONE - Sophie setting up the campaign - all info sent to her
            1. Important distinction:

A donor receives a charitable tax receipt for gift, name and gift information is confidential. The donor must sign a waiver to allow the group to publicize their name.

A sponsor receives public recognition (good PR); name and gift information is advertised

        ii. Disable Gofundme Campaign (?)
        iii. Streak setup to track sponsor emails (?)

iv. Marc Garneau - letter in revision by Orly, will be sent today
v. Hilde Stenuit - writing grants, contacting sponsors, and collaborations

d. Social Media
    i. Youtube channel in the works
    ii. Waiting for confirmation of aminobio if it is okay to use their image. As soon as they get back to use, I will contact the instainfluencers and teachers
    iii. Checklist for each team member:
        1. Molecular Cloud screenshot of you sharing the competition posters and the individual poster made for you
        2. picture of you working
        3. Follow our social media confirmation- Insta, Facebook and Twitter (if you have) and share our page on your account.
e. Wiki
    i. Evernote

f. Human Practices
    i. Hilde Senuit from ICECubes highlights:
        1. What are the effects that you didn't think of? There are effects you need to consider, ie radiation may mutate
        2. Joined the space industry because it was dynamic and interactive with multiple disciplines and nationalities
        3. Our dream is one day we have all of these bioreactors, and drawers, where you can basically take all of the raw biological material and biomanufacture wherever you are.
        4. Hurdles to accessibility:
            a. **Cost**,
            b. **Schedule**- that a project goes up within the time frame of a grant, or for pharmaceutical companies, they don't want to wait five years
            c. **awareness** of how space is available and relevant to them
            d. **processes-** most people think space is such a specialized niche, that you need to understand it inside out to be part of it.
        5. Inclusivity (personal opinion): The space industry, in general, isn't as good as it should be given its innovative nature and that we should be at the forefront of technology and disciplines, I don't think we are at the forefront in terms of inclusivity.

06_26_2020

- Slide link

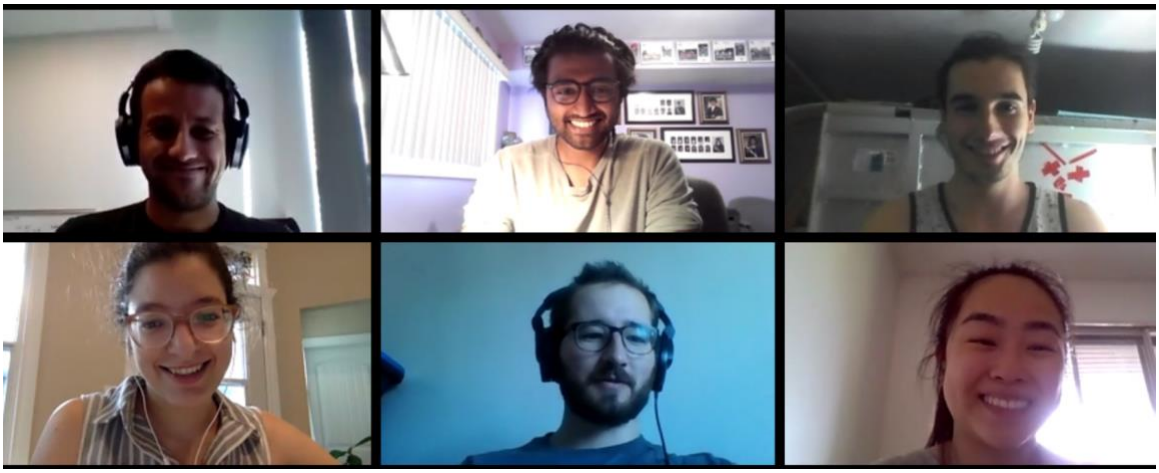
Mentor Action Items:

- Recruitment Questions and Rubric: [doc link]
  Need a mentor at each meeting please.
- Mentor's bios and photos
- Share our Molecular Cloud posters for votes (voters can win a prize!)

Other

- Research digital Notebook: MicrosoftONE, Evernote
- Hootsuite for managing social media, links to fun journal titles
  Cancer & Blue Whales
- Share the Go Fund Me

Genetics art, Meeting with ULaval, Gabe presenting our project to TAU-Israel, and the mentors showing support for Genetics!



06_24_2020

Promega thank you team photo or video :) Cameras on!

Absent: Khash, Ben, Asif (excused), Brian (excused)

1. Housekeeping (5min)
    a. Recruitment Criteria
    Link to interviews Protocol [doc link]

        i. Rubric Criteria
            1. Time commitment (1-5)

            2. Skills Required
                a. Wiki who knows front end languages, html, CSS, javascript/ bootstrap

b. Social media & HP support
c. Graphic Design
d. Genetics
e. Software

3. What else?
    a. What do you want to work on?
    b. Communicate when you can complete or not complete tasks
    c. Have set questions and a scoring rubric for fairness

4. Notes via Iain- What traits make a candidate more desirable (ie skill set) or less desirable (interpersonal conflict)?
   Suggestion for a scoring system and a reminder to consider diversity.

b. Lancia- Drive reorganisation and linking to Slack.
   You will have full comment/ view access and an index yay!
   Everyone will be able to browse around, see what other sub teams are up to and see how our project is organised.

c. Mentors Meeting tomorrow @ 3pm

d. Update agendas before meetings to be more efficient in meetings

2. Safety Form (10min)

3. Medal Criteria
    a. Discuss software/ Database to satisfy Silver medal criteria

Number	Name	Explanation	Guidance (New for 2020)
1	**Engineering Success**	Demonstrate engineering success in at least one aspect of your project. This achievement should be distinct from your Contribution for Bronze. Required URL: 2020.igem.org/Team:YourTeamName/Engineering	*Engineering success can be achieved by making an effort to follow the engineering design cycle: Research → Imagine → Design → Build → Test → Learn → Improve → Research...* *• We invite you to think about ways to tackle and solve one or more of your project's problems and use synthetic biology tools to generate expected results.* *• If you are unable to get into a lab, how would you design your experiments, evaluate the outcome, deal with unexpected results, and plan further steps?* *Notes:* *• For teams who can get into lab, you can design and build a new Part and show that it works as expected (documentation must be on the Main Part Pages on the Registry)*

4. Subteam Updates
    a. Fundraising & Corporate

i. GoFundME is live
ii. Recommendation letters & budget
iii. FundONE meeting Tuesday 11am
iv. Booklet is ready

b. Genetics-
i. What we are doing [doc link]
ii. Software and Genetics to collaborate on gene selection
iii. Deadline July 7 with 10 genes to move forward

c. Software
i. Collection of all possible papers related to microgravity in yeast and other model organisms
ii. Rscripts template ready for microarray data
iii. NCBI API key obtained for E-UTILITY
1. Not useful for processing FASTA
2. Could be useful for other things later
iv. Checking libraries for FASTA files processing (javascript)
1. Seqviz
2. Bionode-ncbi
3. Bionode-fasta
4. Bionode-seq
v. Planning Server frontend design

d. Human practices
i. We need an approved draft contact email to begin contacting stakeholders.
ii. ULaval- improving maple syrup production. Science communication at 4th space: Sustainable food production through biomanufacturing here on Earth or in space. (2nd or 3rd weekend in August)

e. Social Media
-LinkedIn page done (just have to customize it)
-Team needs to fill out google form for wiki bio and social media team introduction bio Link: [doc link]

f. Wiki!!!: https://2020.igem.org/Team:Concordia-Montreal#

06_25_2020

1. Housekeeping
    a. Say ‘yes’ or ‘no’ or write it in a chat, silence is not a yes.
    We make decisions together and when a team member asks for your opinion they really mean it. It makes our project stronger.
    b. Drive reorganisation and linking to Slack tonight. Lose access for a minute then will have full comment/ view and an index!
2. Safety Form
3. Subteam Updates
4. Recruitment

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1. Housekeeping
    a. Say ‘yes’ or ‘no’ or put in chat, silence is not a yes. We make decisions together.
    b. Reminder: Protocols for contacting
    c. Drive reorganisation and linking to Slack.
2. Safety Form
3. Subteam Updates:
    a. Genetics
        i. The plan…
        ii. Changes to project description
    b. Software/ DB
    c. Social Media
    d. Wiki
    e. Fundraising & Corporate
    f. Human Practices
4. Recruitment

06_18_20

Team Meeting Minutes

In attendance: Ben, Maher, Sam, Hajar, Natasha, Asif , Paula
Absent- finals: Lancia (b-day), Gabe (meeting), Evelyn (exams), Khash, Brian

1. Housekeeping
2. Timelines
3. Treasury/ Budget
4. Safety Form
5. BLM/ Inclusion
6. Subteam Updates:
7. Recruitment

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1. Housekeeping:
    a. Social media, fundraising and HP are now one meeting time.
    Tuesdays at 1pm

    b. **Share recruitment posters & Share Molecular Cloud on your personal account-** this could be our flights to Paris!
    We will post posters to team Slack again today so it's easy to share -Lancia

    c. Google Form for training. [doc link]
    Responded: Maher, Evelyn, Samman, Paula, Gabriel, Natasha, Lancia, Hajar (waiting for certificates)
    Missing: Ben, Asif, Khash, Brian

2. Timelines (leaders)- all timelines in!
    I haven't figured out how to link the pages 'live' yet. If anyone knows how to do this please show me :) For now, if you add a deadline please add it to the Master page as well. -Lancia
    [doc link]

3. Treasury/ Budget - Present at this Monday's leader meeting and we will go through it together

4. Safety Form (Paula & team)
    a. Experiment section will have more details after tomorrow's Genetics meeting - Lancia
    #10, 11, 16 & 17 I believe

5. FYI regarding the Black Lives Matter in social media we voted to post. There was great feedback that we should be more clear about our intentions, see below. - Lancia

    Statement and framing:

    In light of the Black Lives Matter movement iGEM Concordia will be **sharing resources to frame inclusion especially in emerging technologies of space research.** We ask the following questions:

    - We ask what is the black and aboriginal experience in space research?
      (We recognize in Canada we have inherent racism towards aboriginal people)
    - What resources are available to encourage inclusion in STEM?
    - How can we connect with these communities?
    - How can we bridge the disconnect?

Next week's post

6. Subteam Updates:
    a. Fundraising & Corporate (Hajar & Samman)
        i. FundONE meeting tbd - in contact (Lancia)
        ii. Gofund me - English and french
        iii. General Sponsorship Tiers
        iv. Dejardins dates have been submitted for the workshop
        v. We are looking into school funding for travel fees.

vi. CUAA Application- when is the deadline?

Important dates

Deadline for submissions	Disbursement of funds
September 23	October
November 18	December
January 27	February
March 24	April

1. Letter of intent
2. Budget
3. Timeline
4. Letter of support

b. Software (Maher)
   i. Collecting more yeast data and looking into the NCBI API
   ii. Meeting with Kenza today for feedback
   iii. Interview with Mike - in progress. Awesome!

c. Social Media & Wiki! (Evelyn & Hajar)
   i. Bio questions- team member's questions.
   ii. Raffle posters/ Project description posters.
   iii. Social Media Project Description, to be posted like this:

Inspiration
In-space bioproduction of biofuels, drugs, fresh foods, and biomaterials is challenged by microgravity which changes the ways genes are expressed in a living organism. This means that simple tasks such as growing bread in space become unpredictable.

Problem
When and how is microgravity acting on the cell? The research community lacks a comprehensive database for gene expression in microgravity and also lacks real-time experimental data for these changes. There is also a need for control strains in microgravity. Control strains help a researcher know

that their experiment is going as planned.

Our Solution
Astroyeast will help the space-science community tackle these problems. Our project includes the creation of an open-source database for microgravity-induced effects in yeast and other microorganisms, as well as a reporter and control strain to study these effects in living organisms.

Can comment here [doc link]

d. Genetics
    i. All papers will be on Zotero & notes on Benchling.
    ii. Meeting the mentors tomorrow, Friday at 5:30pm, to solidify a plan moving forward. Open to everyone!

e. Human Practices
    i. Dr. Lynn Rothschild from civil servant for Nasa & Brown-Stanford-Princeton PI- we are in contact!
    ii. iGEM TAU Israel meeting next week time tbd Tues 10am proposed
    iii. iGEM ULaval meeting for Science Communication at 4th Space- brainstorming Tues 2pm proposed
    iv. CUBES- Link : https://cubes.space/
    v. Begin contacting interviewees next week
    vi. The booklet is done!
    vii. RTTA Form we got feedback from Dr.Caron- meeting up in July!

7. Recruitment
    a. 7 applications - share the posters in social media again before or this weekend! Post on your personal accounts.

Mentor Meeting

Team and Mo, Tina & Iain

Tues- Mentor and Genetics meeting

Not too many notes. Check out the slides :) [doc link]

- New logos
- Kiran no longer on the team, Khash is now a Genetics Task member (5hr/wk), Francesco taking a personal break
- Fellowships announced: Paula, Maher, Lancia, Hajar- now fundraising lead

- Recruitment is out, deadline June 21st
- Medal Criteria 2020: https://docs.google.com/spreadsheets/d/1ZnaltEvXgptJt71KhKpsYX4RH7GwZ-DfKGkkOVLUZSQ/edit?usp=sharing

GENETICS
Build list of genes, critique

- Q: what is the advantage of HiBit
- A: actual tag on the protein is only 33 amino acids long. Thousands of times brighter than GFP and don't need an excitation signal. Simplified. Large linear range. Don't have to lyse the cell there is a live detection method.
- Q: That's for space. For the initial characterization in the lab could you use GFP and use HiBit for the second phase?
- A: GFP could be an invalid reporter because it's bulky. Found some issues about using a plasmid in the cell. Will do more research into it this week.
- Q: Could always integrate it into the genome. Or do both. With GFP and HiBit

Complications

1) Do we have lab access this summer?
2) We have not yet decided on the genetic part- in progress
3) Modelling:
    a) Reporter? If so we need to determine what the design is before we can model it
    b) Training

<u>Heat Shock Response</u>

- Hsf1 regulates hundreds of genes downstream in heat shock response and oxidative stress.
- Drawn to it by the ubiquity of the heat shock response- exists in yeast, *E.coli, A. fulgidus,* us!
- HSP70/HSP 40 refold misfolded proteins. They bind hydrophilic parts of the protein that shouldn't be exposed, refold it.

<u>HOG (High Osmolarity Glycerol) Pathway</u>

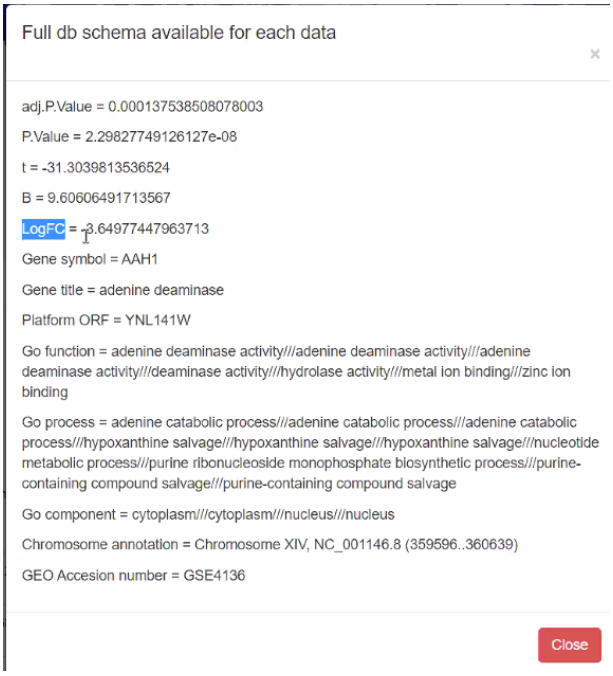
- HOG1 is a MAPK but there are a lot of genes we could hone in on

Q: Have you discussed the basic criteria for selecting these genes?
A: Criteria- Activity: essential genes are a good place to start; at decent concentrations under normal conditions, reputable data that shows either the regulation- transcriptomic- changes in microgravity or deletion strain data in microgravity. Then the gene can be selected as a potential candidate.

Response:
That's good but the main driver should be the transcriptomic data and the fold change.
If you have the list of genes you can look at the promoters themselves. Usually promoters will have the same name as the genes. They have already been characterized which will tell you the strength.

Cell Wall Integrity (CWI)- regulation and synthesis of the cell wall

SOFTWARE



06_11_2020

Meeting Minutes

0. Housekeeping (5min)
    1. Project Name! & Review of Project Description Quiz (15- 20min)
    2. Let's release our project to the world! (5min)
    3. Timelines and Deadlines (5min)
    4. Medal Criteria- improve an existing part (5min)
    5. Subteam Updates (15-20min)

Housekeeping (5min)

- Future meeting times… at 5 or 6?

- Future: log into meetings 5min before so we don't have to wait there will be a **Skriblio** to play! Meeting starts at 5min after the scheduled meeting time. Aka log in at 5:55 at the latest, meeting starts at 6:05.
- Fellowships: Paula, Maher, Lancia, Hajar (Khash was considered but chose to take a CSRA he received instead- congrats!)
    - Khash no longer fundraising lead- on Genetics as a task member.
    - Hajar is now Fundraising Lead. Hajar will organise and delegate tasks to the whole team- we will all participate to get that money that can take us to Paris!
    - Fellowships are acting as leaders with the other elected leaders.
    - Fellowships meet with Orly and Dr. Kachroo every two weeks and will be transparent and relay info to the team.
    - We make decisions as a team always

Your Team Leaders

Paula- Team Lead/ Human Practices

Maher- Software & Database

Evelyn- Social Media & Wiki

Hajar- Fundraising & External Relations

Samman- Corporate Relations

Lancia- Human Relations/ Secretary/ Internal Relations

- Recruitment is out! Woohoo! Share the posters on your personal accounts.

- Human Relations announcement
    - Availability/ Communication- Let us know if you're taking a holiday or have exams.

- Social Media BLM:
    - Vote posted, closes Friday at midnight. Questions? Ask us or you can always communicate privately with the mentors.

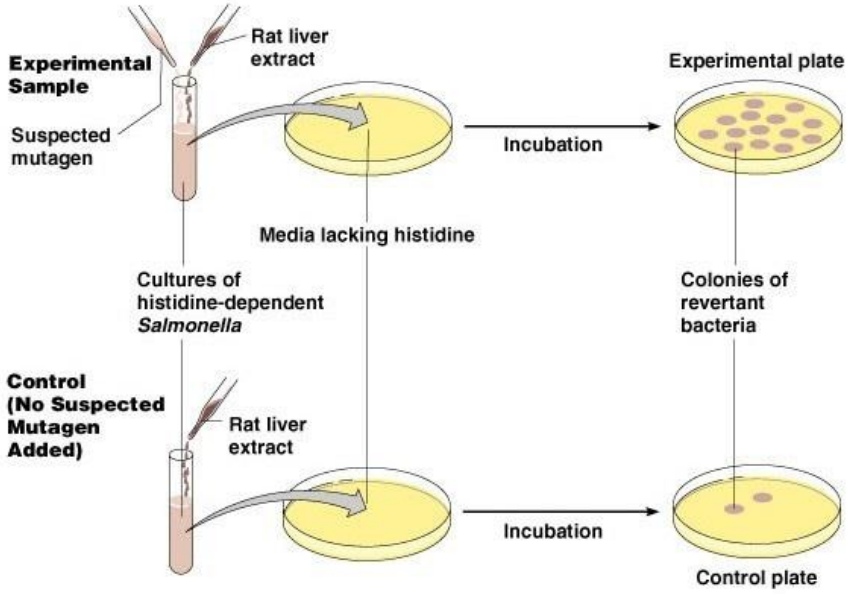
1. Project Name and Description Quiz Walkthrough

   Description to date [doc link]
   Clarifications:
    a. **Stakeholder**: Main group of people that are affected or will benefit by our project

    b. Microgravity: No matter where you are there is always some kind of gravitational pull, that's why you can always see shape in the universe

c. **What is a control?**

   i. ie Background test to see baseline of the cell measured in fluorescence. Assures we have prepped the sample correctly for example.



Example not related to our project.

d. **Control vs Reporter**

Both are reporter strains...

e. **What makes our project unique?**

   i. Monitoring the effects of microgravity on the cell in real-time, quantitatively.

   ii. Producing a reporter strain- tells us *when* cell is suffering effects of microgravity; resistant strains

f. **Collaboration:**

When we say collaboration we are speaking about the iGEM definition of collaborating with other iGEM teams. Below is the Collaboration Medal Criteria we need to fulfill.

Partnership	Collaborate throughout the year with at least one other 2020 iGEM team on a set of shared objectives related to both of your projects. This partnership should go beyond a Silver medal collaboration. Required URL: 2020.igem.org/Team:YourTeamName/Partnership	*Some questions to help guide you:* • How did your collaborative work inform and shape your project at different stages? • How did each team in the partnership benefit from the collaboration? • How did your teams work together throughout the season? *Notes:* Compared to the Silver Medal Collaboration criterion, partnerships should be more central to the success of both teams' projects and teams should be working together throughout the season (not a single interaction). A Partnership and the Silver Medal Collaboration may be done with the same team(s).

g. **Cell Integrity, Osmoregularity & Heat Shock Pathways are important** because they are well-characterized and studied. Easy to make inferences.

h. **Human Practices**
   i. To validate our project and idea, make sure it's good for society. That it will benefit researchers we are targeting.

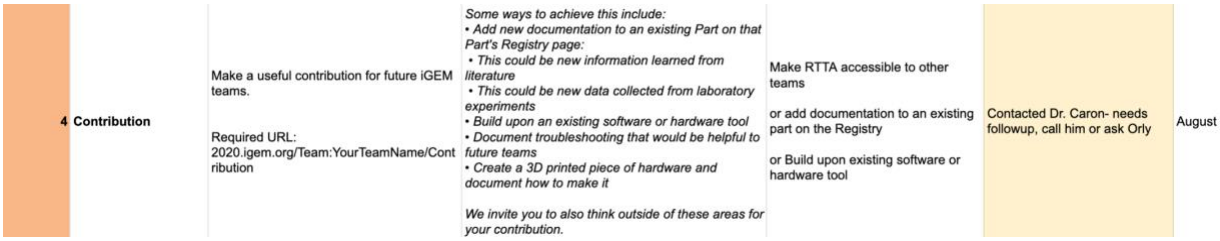
2. Put our Project out There!
   a. Description and Astroyeast logo on social media ASAP - Hajar is working on a graphic
   b. Website- recurring fee ~50$/ year. Vote (11 present) YES
   c. Our logo

3. TIMELINES and DEADLINES for next week (due Thursday June 19th)
   i. 3 month- what are you doing, when is the deadline
   ii. If you need help we will help you

→ Refer to Medal Criteria Spreadsheet [doc link]

4. Medal Criteria- Improve an Existing Part

   Who can take this on? Can be very simple and can be any part, doesn't have to be related to our project.



4	Contribution	Make a useful contribution for future iGEM teams. Required URL: 2020.igem.org/Team:YourTeamName/Contribution	*Some ways to achieve this include:* *• Add new documentation to an existing Part on that Part's Registry page:* *• This could be new information learned from literature* *• This could be new data collected from laboratory experiments* *• Build upon an existing software or hardware tool* *• Document troubleshooting that would be helpful to future teams* *• Create a 3D printed piece of hardware and document how to make it* *We invite you to also think outside of these areas for your contribution.*	Make RTTA accessible to other teams or add documentation to an existing part on the Registry or Build upon existing software or hardware tool	Contacted Dr. Caron- needs followup, call him or ask Orly	August

   - NCBI try to search for any part in different databases to see what data about that gene. Maher will begin. Create a team to accomplish this.

5. Subteam Updates
   a. Social Media
      i. Molecular Cloud:
         1. Raffle Prize- AminoBio Labs: Create Living Paintings Kit
         2. Form & Screenshot
      ii. Team bios- Has everyone sent a photo? yes!
      iii. LinkedIn. Yes!

   b. Software/ Database
      i. Extracting more data from NCBI, all data into database for one population, user stories created, preparing demo
      ii. Studies for microarray no problem, R-script not achieved for RNA sequences so far

   c. Genetics
      i. Tuesday meeting- We need a plan! Ask if mentors can join.
         1. What is our timeline/ process?
         2. What protocols/ reagents do we need in general- for sponsorship package.

   d. Human Practices
      i. JulyGEM with UCalgary July 25th/26th
      ii. Planning/ brainstorming 4th space conference for Science Communication

   e. Fundraising & Corporate Relations
      i. Let's see that sexy booklet! [doc link]

Notes for tomorrow's Mentors meeting:

- Feedback for Stakeholder list
- Can mentors attend the Genetics meeting Monday? We need a plan!

06_04_2020

Meeting Minutes

1. Project Description and Quiz
2. Project Name - Vote
3. Reorganizing Fundraising & Genetics Opportunities
4. Recruitment
5. Subteam updates

Attendance

- Present: Lancia, Gabriel, Hajar, Evelyn, Paula, Maher, Natasha, Ben, Asif, Brian.
- Absent: Khash, Kiran, Samman (Excused)

1. Project Description & quiz (?) (5 min)

   READ ME [doc link]
   - Does everyone know what we are doing?
   - Ask questions- we know you have some
   - Sent after the meeting Deadline Friday at midnight

2. Project Name (5-10min)
   a. Astroyeast
   b. Yeastronauts
   c. YeastX

*Poll going out tonight in quiz, to choose the New Name.

3. Reorganising Fundraising and assuring opportunity for genetics work (5-10min)

- We spoke in Genetics about restructuring Fundraising so the whole team is involved and we can involve more team members in Genetics. Fundraising is huge and we think it requires more people.

  An idea is having Khash as a fundraising Lead delegating rotating tasks to the team (every team member is to be involved in fundraising).

  We think there should be a meeting for this with X , X, fundraising members and X also has fundraising leads from Space that could contribute opinions.

  Likewise because this is a synthetic biology team we would like to assure every team member has the opportunity to work on genetics. If you are interested in working on genetics join the channel and speak up! We can assign manageable research tasks or we can assist you in contributing to our research and database.
  → Fundraising meeting

4. Recruitment Update (5 min)
   a. Overview of process decided
   b. Poster- Paula (Working on it, should have it done by tomorrow morning)
   c. Mentor application feedback
      i. Kenza tonight

5. Subteam updates (20-30)
   a. Genetics
      i. Have something more substantial prepared this week
      ii. Two inputs in Database lacking information (Brian?)
      iii. Should we put our names next to input? YES, it was suggested to have more RT-PCR research papers in the database.
   b. Software
      - Two depositories
      - Concern that all parameters are not filled.
      - Should we put together the software database and genetics database? the databases have different purposes, but the information got by genetics could be helpful for other researchers.
      - Ask mentors: should we put our own results in the database?
      - Software team wants to have more RT-PCR information in the Data-Base
      - Going to microarray databases and pulling up data sets relevant to that.
      - How can we merge the database and the notes from the genetics team?
      - More to be discussed in tomorrow's software meetings.
      - Mentors want a broader database not only focus on yeast, the team also agrees. Good to be open.

c. Human Practices
    i. Interview questions
    ii. Summary on what was done :
        1. Collaboration post has been shared in iGEM website
        2. Hajar is working on the stakeholders and booklet
        3. Protocol for external contact as been send to the mentors
        4. We haven't received an answer from Dr.Caron, A follow-up email will be sent out this week for the RTTA
    iii. Next week:
        1. Finish up Booklet to send to stakeholders
        2. fill up the RTTA form
        3. reach out to iGEM Teams that we know we could have a good collaboration
        4. checkout the previous iGEM project links sent by Maher and answers the following:
            a. How did they approach the microgravity problem in space?
            b. What we could learn from them?
            c. What were their main problems and how they solved them?
            d. Did they use a software aspect in their project?
            e. How they did it?

    iv. Finance/ Fundraising
        1. Samman sponsorship/ corporate list send to igem gmail
        2. GoFundMe coordinating with Orly
        3. FundOne Lancia Follow-up

d. Social Media
    i. Link accounts