

WEEK 1 AT FRED HUTCH CANCER CENTER IN THE SUBRAMANIAM LAB

GITHUB, COMMAND PROMPTS, VSCODE AND MARKDOWN

- LANGUAGE BETWEEN WINDOWS AND MAC COMPUTERS
- COMPUTER INTERACTIONS AND NAVIGATIONS
- TROUBLESHOOTING ERROR MESSAGES WITHIN OUR CODE
 - THERE WERE A LOT OF THEM

CRISPR

- IT USES A SPECIALIZED PROTEIN CALLED CAS9, GUIDED BY A SMALL RNA MOLECULE, TO TARGET SPECIFIC DNA SEQUENCES AND INTRODUCE MODIFICATIONS, WITHIN LIVING ORGANISMS

```
C:\Users\chris\rasilab_spelman_2023\notes>git push origin main
Everything up-to-date

C:\Users\chris\rasilab_spelman_2023\notes>git add cb_crispr_notes.md
fatal: pathspec 'cb_crispr_notes.md' did not match any files

C:\Users\chris\rasilab_spelman_2023\notes>

C:\Users\chris\rasilab_spelman_2023\notes>cb_crispr_screening_notes.md

C:\Users\chris\rasilab_spelman_2023\notes>
cb_crispr_screening_notes.md

C:\Users\chris\rasilab_spelman_2023\notes>
git commit
On branch main
Your branch is up to date with 'origin/main'.

Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   cb_crispr_screening_notes.md

no changes added to commit (use "git add" and/or "git commit -a")

C:\Users\chris\rasilab_spelman_2023\notes>git commit -m "edit #4"
On branch main
Your branch is up to date with 'origin/main'.

Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   cb_crispr_screening_notes.md

no changes added to commit (use "git add" and/or "git commit -a")

C:\Users\chris\rasilab_spelman_2023\notes>git add cb_crispr_screening_notes.md
C:\Users\chris\rasilab_spelman_2023\notes>git commit -m "edit #4"
[main 5fc9048] edit #4
```

What have I learned during my first week at Fred Hutch?

I learned ...

- About the application **terminal** on my mac computer and the similarities and difference between using the app on a mac computer and windows computer.
- **Markdown** and its markup language to transfer to a text document, website, etc.
- **GitHub** and **VSCode** and the connection to transfer text using the terminal on my mac
- About **Slack** and its use for messaging
- And refreshed my memory on **CRISPR** and its strategy to edit genomes
- The routes of the campus

```
racequarterman@graces-mbp notes % git commit
error: pathspec 'screen' did not match any file
error: pathspec 'notes' did not match any file
racequarterman@graces-mbp notes % git add gq
racequarterman@graces-mbp notes % git commit
error: pathspec 'notes' did not match any file
racequarterman@graces-mbp notes % git push o
git: 'credential-manager-core' is not a git c
o https://github.com/kychen37/rasilab_spelma
! [rejected]        main -> main (fetch first
error: failed to push some refs to 'https://g
int: Updates were rejected because the remot
int: not have locally. This is usually cause
int: to the same ref. You may want to first
int: (e.g., 'git pull ...') before pushing a
int: See the 'Note about fast-forwards' in '
racequarterman@graces-mbp notes % git pull o
error: cannot pull with rebase: Your index co
error: please commit or stash them.
racequarterman@graces-mbp notes % git add gq
```

rasilab_spelman_2023 / gq_crispr_notes.md

Preview Code Blame 98 Lines (87 loc) · 4.94 KB

What is CRISPR-Cas9?

Jennifer Doudna's Ted Talk

- Doudna purpose of creating CRISPR was to invent technology for **editing genomes**
- Changes to genetic cells to cure genetic diseases
- Cas9 is a specific protein that cuts the DNA to change specific infected part on DNA
- Stands for Clustered Regularly Interspaced Short Palindromic Repeats
- Allows the cell to keep track of infection..."genetic vaccination card"
- Trigger cells to repair breaks in DNA at the points near or at the mutation
- Still some complications due to unintended effects but when it happend Doudna believes th
- Enhancement for genetic change..."designer humans"

YourGenome

- Edits parts of the genome by removing, adding, or alternating section of DNA
- CRISPR is beneficial because it is a simple and precise way of genetic manipulation
- Cas9 (enzyme) acts as a "molecular scissor"
- gRNA (guide RNA) guides the enzyme to the right part of the mutated genome
- Makes a cut across both strands

The terminal (mac/linux) or command prompt (windows) is a way to execute sim

GitHub

- Make an account on github and verify your email address
- Install git to your laptops by following [this](https://www.atlassian.com/gi
- Clone our group's remote repository to your local computer by opening the te
- github.com/kychen37/rasilab_spelman_2023.git``
- Since this repo was made in my account (kychen37), I needed to added gquar
- [Settings](https://github.com/kychen37/rasilab_spelman_2023/settings) before
- Each user needs to then generate a personal access token:
- Go to your user settings -> Developer settings -> Personal access tokens -
- Under Note, name the token something descriptive and check 'repo'
- Press Generate token, copy the entire token to a different location like a
- Follow the top comment on https://stackoverflow.com/questions/46645843/where
- access token to the git credential helper so you don't have to keep copy/pasti
- ``git config --global user.name "Katharine Chen"``
- ``git config --global user.email kychen37@uw.edu``
- ``git config --global credential.helper manager-core``



Grace Quarterman