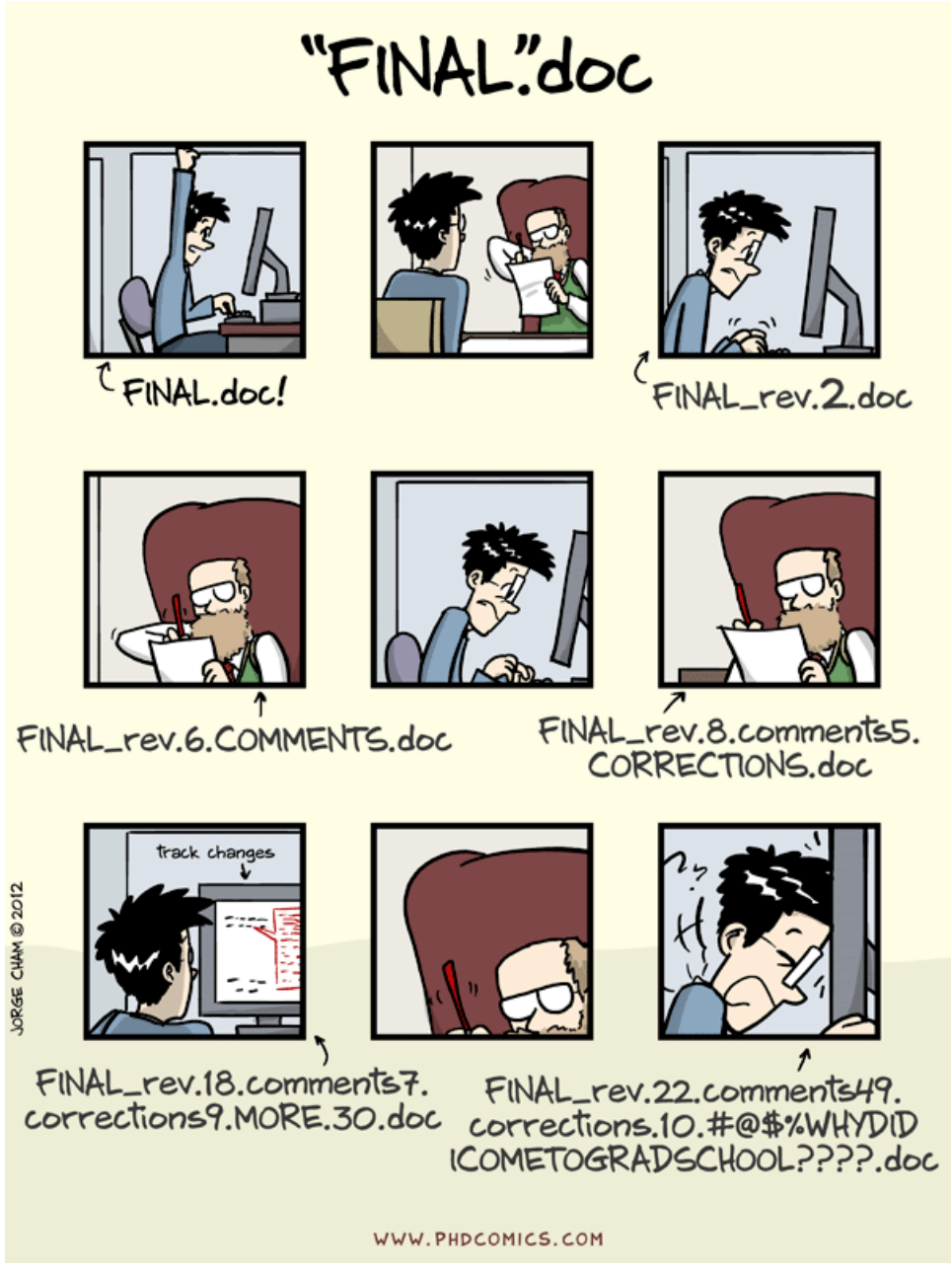
Make Incremental Changes

Version Control with git and GitHub



http://www.phdcomics.com/comics/archive.php?comicid=1531

Methods for tracking versions

- Don’t keep track
- Save numbered files
- Formal version control

Suppose it stops working…

- Don’t keep track
  - Good luck!
- Save numbered files
  - Manually compare files (with `diff`)
- Formal version control
  - Easy to study changes back in time
  - Easy to jump back and test

Karen Cranston
@kcranstn

Following

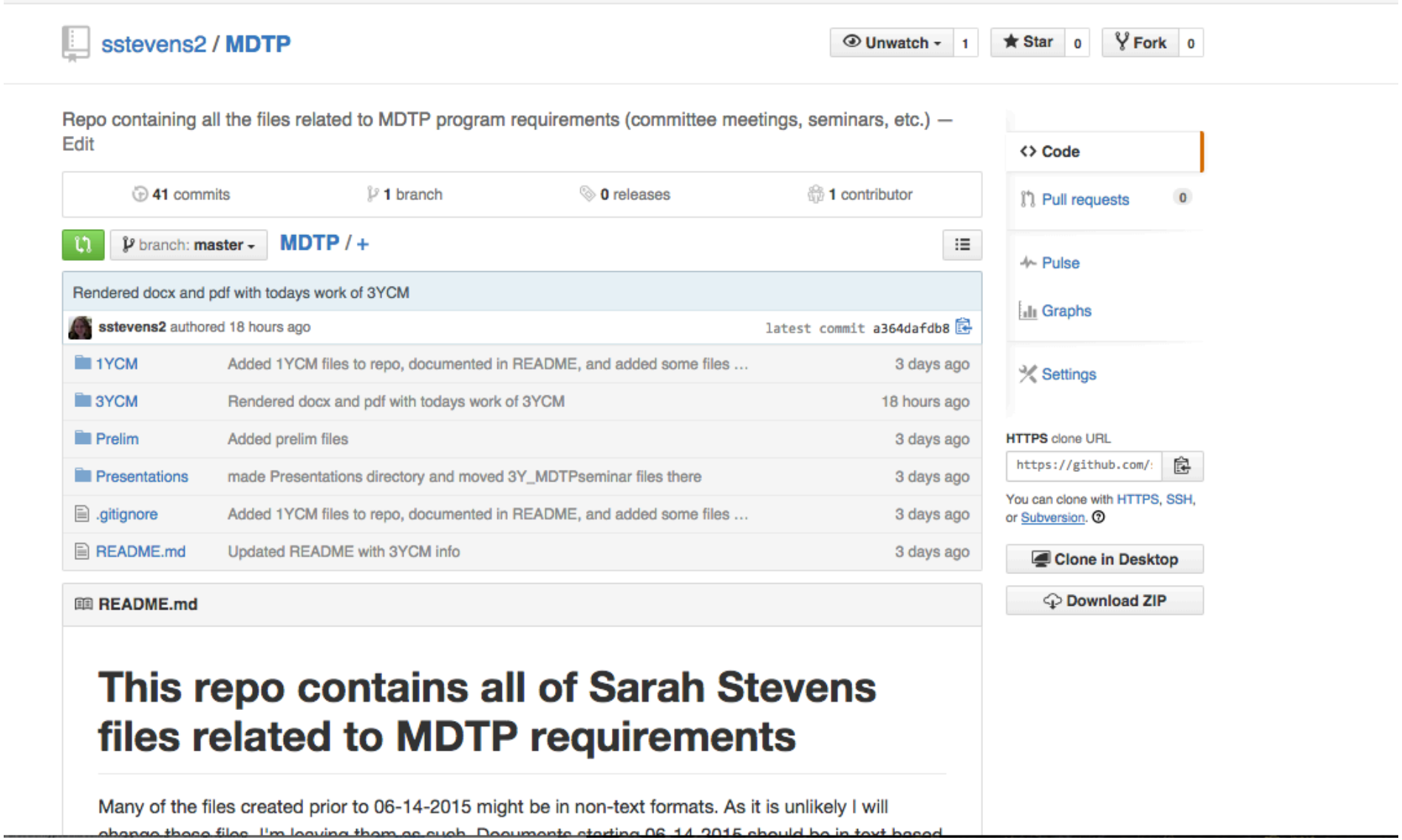
@mtholder motivating git: You mostly collaborate with yourself, and me-from-two-months-ago never responds to email. @swcarpentry

http://bit.ly/kcranstn_tweet

Why use formal version control?

- Backup files that are changing
- Store a history of those changes
- Explore that history
- No worries about breaking things that work
- Merge changes from multiple people

Example repository



sstevens2 / MDTP

Unwatch 1 | Star 0 | Fork 0

Repo containing all the files related to MDTP program requirements (committee meetings, seminars, etc.) — Edit

41 commits | 1 branch | 0 releases | 1 contributor

branch: master | MDTP / +

Rendered docx and pdf with todays work of 3YCM

sstevens2 authored 18 hours ago — latest commit a364dafdb8

1YCM	Added 1YCM files to repo, documented in README, and added some files …	3 days ago
3YCM	Rendered docx and pdf with todays work of 3YCM	18 hours ago
Prelim	Added prelim files	3 days ago
Presentations	made Presentations directory and moved 3Y_MDTPseminar files there	3 days ago
.gitignore	Added 1YCM files to repo, documented in README, and added some files …	3 days ago
README.md	Updated README with 3YCM info	3 days ago

README.md

This repo contains all of Sarah Stevens files related to MDTP requirements

Many of the files created prior to 06-14-2015 might be in non-text formats. As it is unlikely I will change these files, I'm leaving them as such. Documents starting 06-14-2015 should be in text based

Code | Pull requests 0 | Pulse | Graphs | Settings

HTTPS clone URL

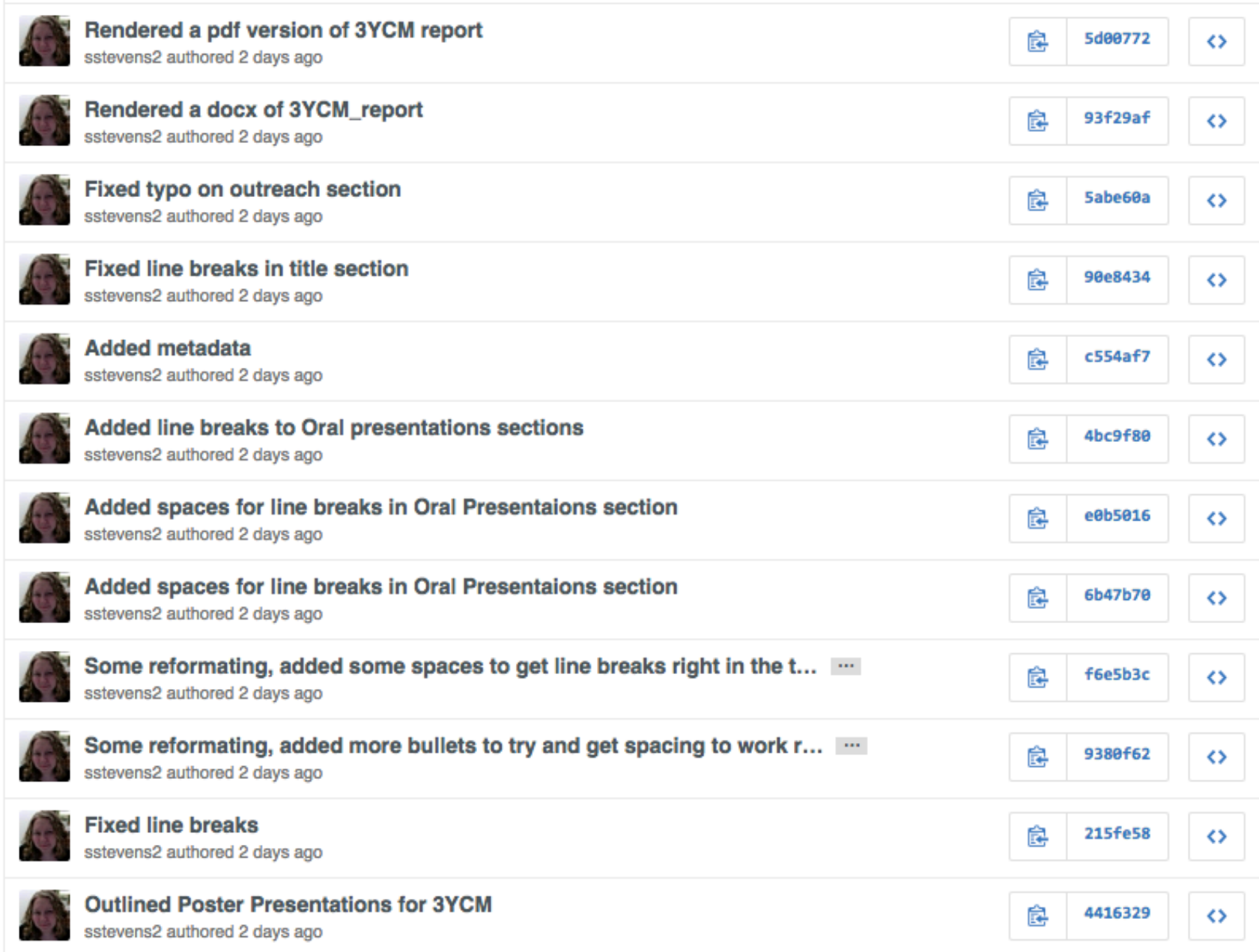
https://github.com/:

You can clone with HTTPS, SSH, or Subversion.

Clone in Desktop

Download ZIP

Example history



Example commit

Updated oral presentations sections of 3YCM

Browse files

master

sstevens2 authored 2 days ago 1 parent d3dbd10 commit 4425f6bf5849ccead99e49a0cfbf0698c758a461

Showing 1 changed file with **3 additions** and **3 deletions**. Unified | Split

6 3YCM/3YCM_Report.md View

```
@@ -10,8 +10,8 @@ Meeting: July 8th, 2015 in MSB 5503
 - Genome announcements

 ## Oral Presentations
-- ISME 2014
-- SAME 2015
+"Genome-wide Selective Sweeps in Natural Bacterial Populations Revealed by Time-series Metagenomics." 15th International Symposium on Microbial Ecology. August 24, 2014. Seoul, South Korea
+"Genome-wide and Gene-specific Selective Sweeps in Freshwater Bacterial Populations Revealed Using Metagenomics." 14 Symposium Society for Aquatic Microbial Ecology. August 2015. Uppsala, Sweden

 ## Professional Development
 Software Carpentry Instructor Training - May 2015
@@ -20,7 +20,7 @@ Software Carpentry Instructor Training - May 2015
 Molecular Microbial Ecology and Evolution(MoMiEE) support group - Started Nov. 2014 - Co-chair
   - Plan and facilitate our monthly meetings, organize our webpage, and started a biweekly Python study group.

-MoMiEE Python Study Group - Started Dec. 2014 - Chair
+MoMiEE Python Study Group - Started Dec. 2014 Chair
   - Plan and facilitate our bi-weekly meetings.

 Data Carpentry Hack-a-thon - Mar. 2014
```

Write | Preview Markdown supported Edit in fullscreen

Why git?

- It’s fast
- You don’t need access to a server
- Amazingly good at merging simultaneous changes
- It’s popular
- GitHub

Why git?

- It's fast
- You don't need access to a server
- Amazingly good at merging simultaneous changes
- It's popular
- GitHub
  - A home for git repositories
  - Interface for exploring git repositories
  - Like facebook for programmers (and data scientists)

It’s not just for software

You can track any content (but mostly plain text files)

- source code
- data analysis projects
- manuscripts
- presentations
- websites