



Chaste infrastructure

“Cancer Heart and
Soft Tissue
Environment”

- How to get help
- How to help out

Joe.Pitt-Francis@cs.ox.ac.uk

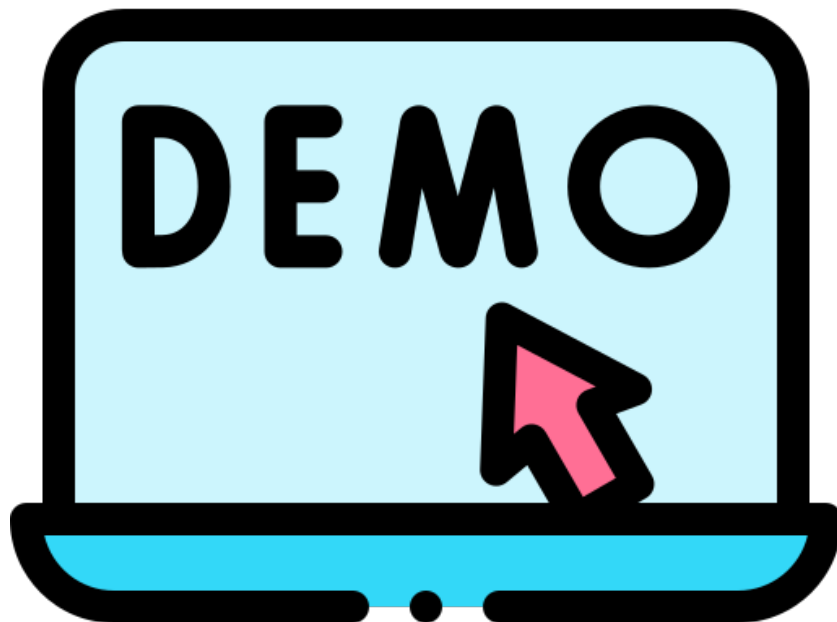
<https://chaste.github.io/>





Demonstrations

- Please try some of this, or ask for a live demo





Getting help: passive

- Tutorial pages (for now) <https://chaste.cs.ox.ac.uk/trac/wiki/UserTutorials>
- Code documentation (for now) <https://chaste.cs.ox.ac.uk/public-docs/>
- Chaste Github webpages (in future) <https://chaste.github.io/>

The screenshot shows a web browser window with the address bar displaying <https://chaste.cs.ox.ac.uk/trac/wiki/UserTutorials>. The page features the Chaste logo and a navigation menu with links: Login, Help/Guide, About Trac, Register, Preferences, Getting Started, Wiki (selected), Timeline, Roadmap, Browse source, Test results, Documentation, View tickets, and Search. The main content area is titled "Chaste Tutorials" and includes a section "Before you start" with a warning about the latest development version and a link to the tutorials. Below this is a section "The basics" with a note about the assumed knowledge of C++ and libraries. A sidebar on the right lists various tutorial topics: Chaste Tutorials, Before you start, The basics, Core functionality, Solving ODEs, Solving PDEs, Writing new PDE solvers (advanced), Solid Mechanics, Cardiac Chaste, Cell-based Chaste, Lung Chaste, and Automatically generated alphabetical listing.

UserTutorials – Chaste

← → ↻ 🏠 🔒 https://chaste.cs.ox.ac.uk/trac/wiki/UserTutorials 🔍 Search

Chaste

Search

Login | Help/Guide | About Trac | Register | Preferences

Getting Started | **Wiki** | Timeline | Roadmap | Browse source | Test results | Documentation | View tickets | Search

wiki: UserTutorials

Start page | Index | History

Chaste Tutorials

Before you start

If you are viewing this on the Chaste wiki, **the tutorials here are automatically updated to work with the latest development version of Chaste**. They are not guaranteed to work with any release version, in fact they are unlikely to! If you are working with a release version of the code then this page is archived upon releases; the tutorials corresponding to each release version of Chaste can be found at <https://chaste.cs.ox.ac.uk/chaste/tutorials/>

The basics

These tutorials assume prior knowledge or understanding of various C++ language features and some libraries, including (at least): `std::vector`s, `c_vector`s, and object-oriented inheritance including abstract classes and virtual methods.

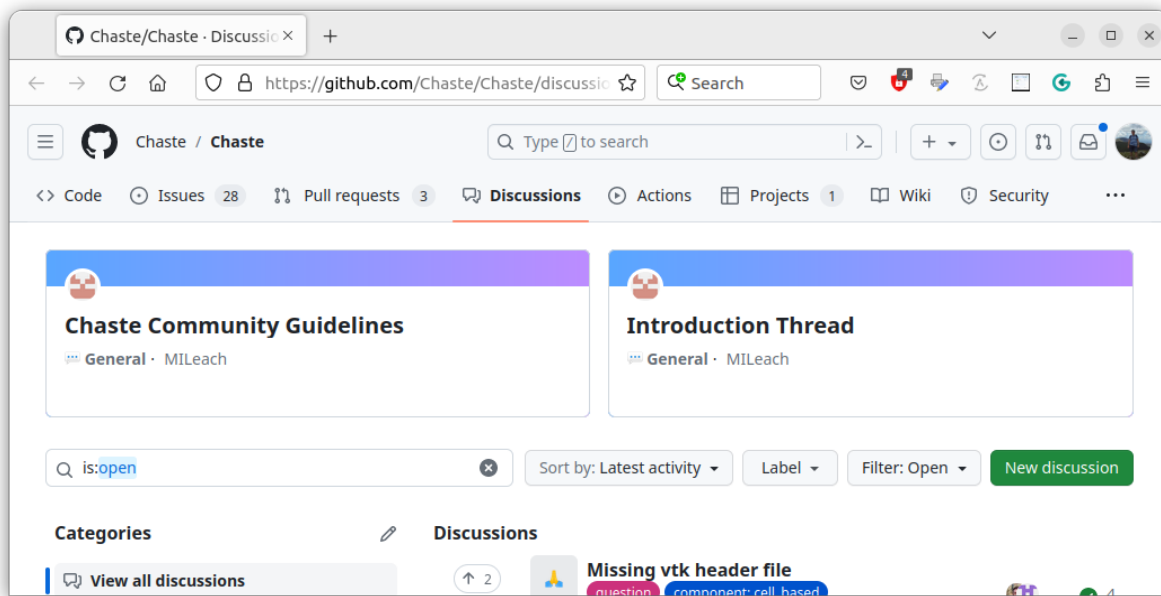
- Chaste Tutorials
- Before you start
- The basics
- Core functionality
 - Solving ODEs
 - Solving PDEs
 - Writing new PDE solvers (advanced)
- Solid Mechanics
- Cardiac Chaste
- Cell-based Chaste
- Lung Chaste
- Automatically generated alphabetical listing



Getting help: active

- Github discussions

<https://github.com/Chaste/Chaste/discussions>

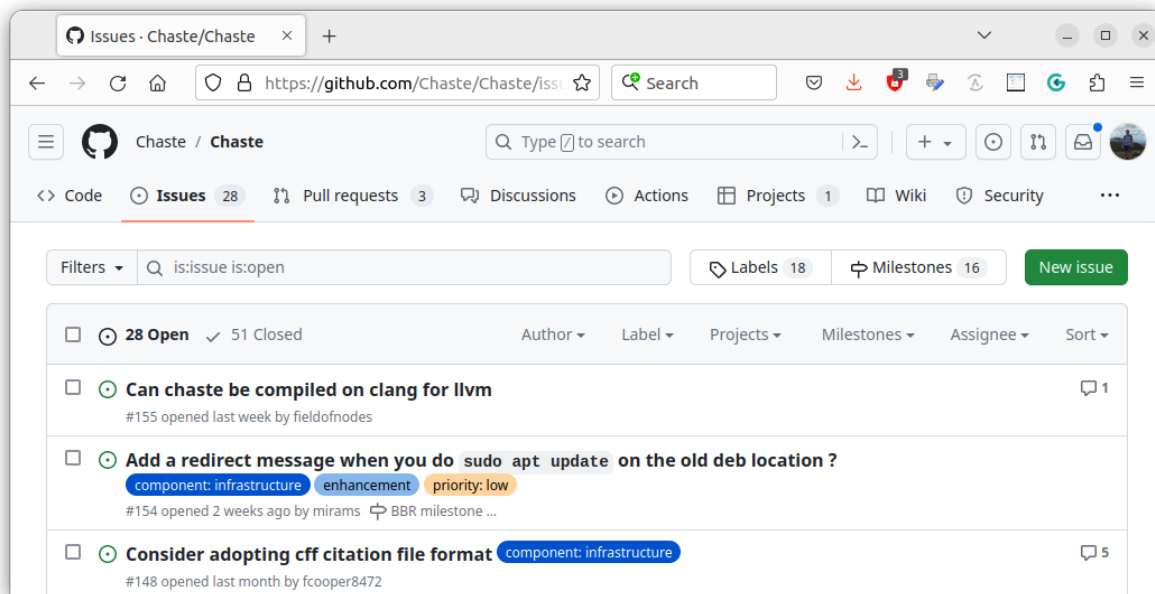




Getting help: more active

- Raise a Github issue (bug report)

<https://github.com/Chaste/Chaste/issues>





Getting help: more active

- A new “bug” issue contains a template
- You can edit, add or delete things as needed

The screenshot shows a web browser window with the address bar displaying `https://github.com/Chaste/Chaste/issues/new`. The page title is "New Issue · Chaste/Chaste". The main heading is "Issue: Bug report". Below this, there is a prompt: "Create a report to help us improve. If this doesn't look right, [choose a different type](#)." The issue description field contains the text: "The bug I found today". Below the description field, there are tabs for "Write" and "Preview". The "Write" tab is active, showing a template for a bug report. The template includes the following text: "Please see the [guides](https://chaste.cs.ox.ac.uk/trac/wiki/ChasteGuides), and [discussions](https://github.com/Chaste/Chaste/discussions) for answers to common problems." followed by two sections: "**Describe the bug**" with the instruction "A clear and concise description of the problem." and "**To Reproduce**" with the instruction "Steps to reproduce the problem." At the bottom, there is a note: "Attach files by dragging & dropping, selecting or pasting them." On the right side of the page, there is a section titled "Assignees" with a sub-header "Assign up to 10 people to this issue". Below this is a search bar with the placeholder text "Type or choose a user". A list of suggestions is shown, including: "jmpf Joe Pitt-Francis", "AlexFletcher Alex Fletcher", "bdevans Ben Evans", "BJackal Jack", "chastedevelopment Chaste Bot", "ChastePi Chaste Raspberry Pi", and "fcooper8472 Fergus Cooper".



Helping out: overview

- Main code in the Github *develop* branch
- *develop* is updated with tested, reviewed code
- Work is only pushed via other branches
- Changes tested **before** appearing in *develop*
- Automatic testing on Pull Request
- Testing on Github/University hardware
- Peer-review **before** merge to *develop*...
- ...but you get to merge your own changes



Helping out: fixing stuff

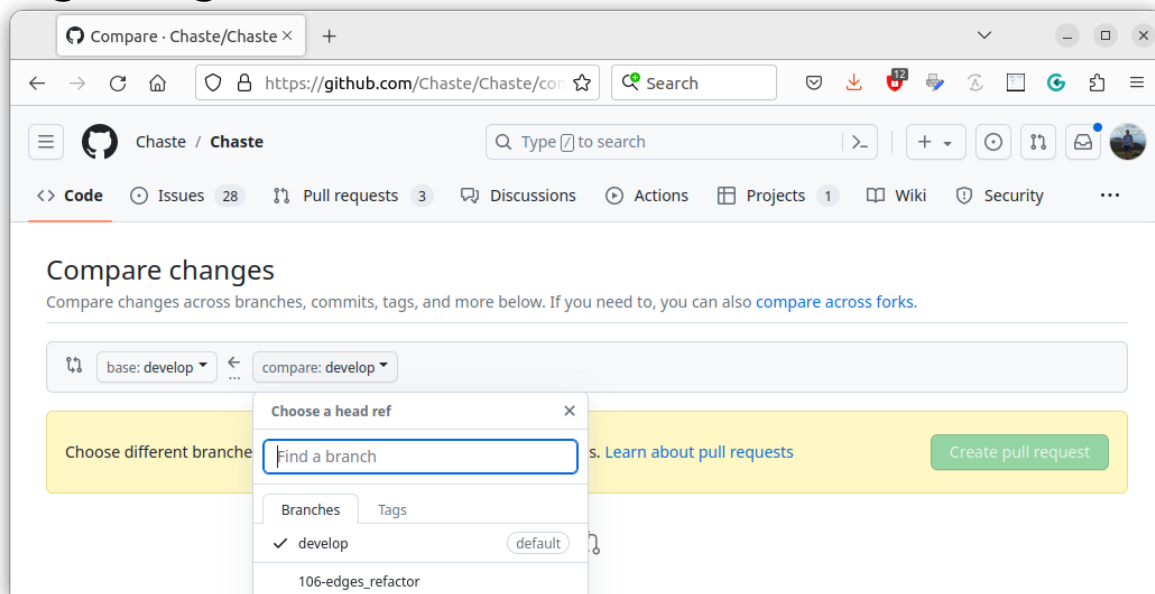
- Work and commit in a branch (or a fork)
- Use your C++ development environment (Ubuntu/Docker)

```
### Get code
$ git clone https://github.com/Chaste/Chaste.git
### Make a local branch from devel
$ git checkout devel
$ git branch issue_999_my_bug
$ git checkout issue_999_my_bug
### Do the work and regularly keep it up-to-date
$ git merge devel
$ git commit -m "#999 First attempt at fix"
### Push local commits back to Chaste Github
$ git push
```




Helping out: fixing stuff

- Make the branch into a Pull Request
- Choose reviewers
- Start getting emails about automated tests





Helping out: fixing stuff

- Deal with criticism and failing tests
- Note that pushes to the branch will change the Pull Request and re-trigger the testing

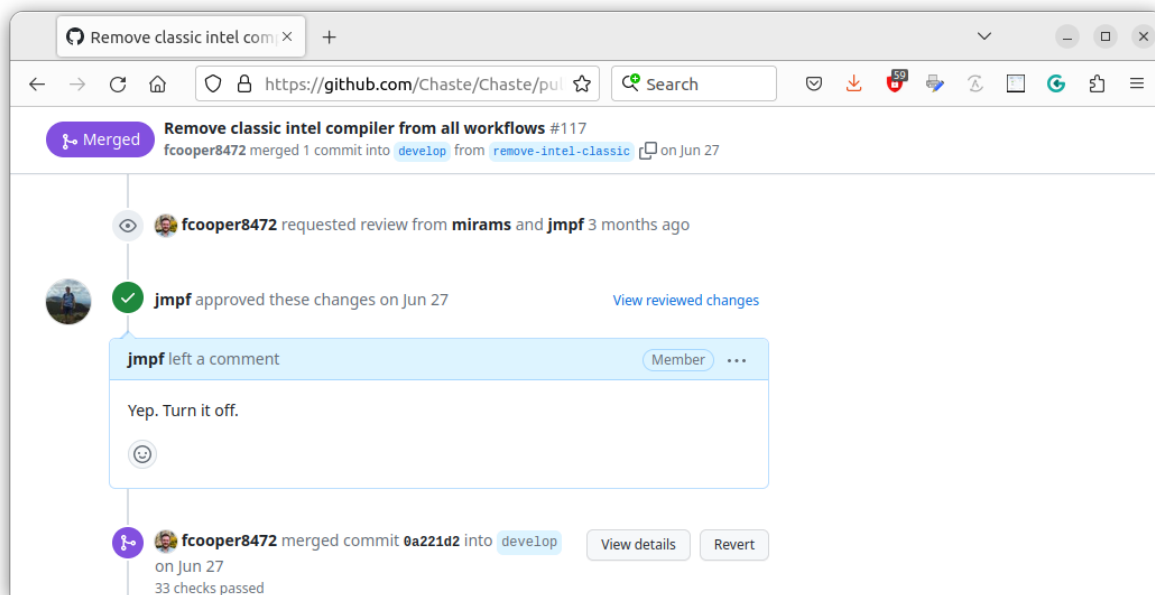
The screenshot shows the GitHub Actions interface for the Chaste repository. The left sidebar lists various workflows, with 'Portability' selected. The main area displays a list of workflow runs for 'Portability'. The top run is a successful green checkmark for 'BBR WP 1.1 Immersed Boundary' (Pull request #277) by MILEach, completed 15 hours ago. The bottom run is a failed red X for 'BBR WP 1.1 Immersed Boundary' (Pull request #276) by MILEach, completed 19 hours ago. Both runs show a duration of 1h 50m and 38s.

Event	Status	Branch	Actor
workflow_dispatch	Success	immersed-boundary--	MILEach
workflow_dispatch	Failure	immersed-boundary--	MILEach



Helping out: fixing stuff

- After passing tests and an approval: merge
- Now close the issue and delete the branch





Overview

- How to get help
 - Read the tutorials
 - Ask a question in Discussions
 - Raise an issue (bug report)
- How to help out
 - Make a branch and write a fix/feature
 - Turn branch into Pull Request
 - Wait for approval, then merges as needed