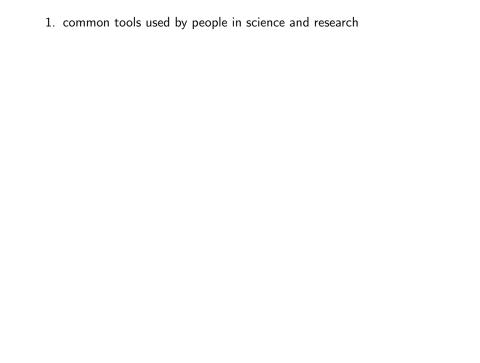
2. General workflow of research-based work.

1. A simplified diagram. Actually a lot more complex

3. Most work now-a-days is being carried out with the use of computer software, such as ...

- 1. Experimental: DICOM/Image viewers, fsl tools, software to drive the big machines
- 2. Data Analysis: Simple/complex libraries, from numpy, scipy to scikit-learn, tensorflow
- 3. Simulators: Neuron, NEST, plenty more...
- 4. Lots of hardware and software is required for basic neuroscience research.



1. simple definitions

- 1. reproducibility crisis. unable to reproduce data, results 2. benefits of open-sourcing code. helps community. reuse. build-on
 - and improve. publication becomes an advert for the code.

- 1. Full of people from various fields
- 2. Not all have the required XP

- The dev may not provide instructions on how to use the software
 Difficult for people who lack programming knowledge to build/use the tool directly from the dev.
- 3. End users not always provide feedback

- 1. Given how interdisciplinary neuroscience is, most researchers are NOT trained in development
- 2. based on anecdotal evidence, software used in research is not of the best quality
 - 3. may or may neet development standards
- 4. may have an instruction set on how to install/use the software
- 5. resolving dependencies can be difficult

- 1. The other side of the bridge is the users
- 2. also suffer from resolving dependencies
- 3. lack the required skill/knowledge of programming, they have a hard time setting up and using the software
- 4. If correctness of a tool cannot be verified, how can the correctness of the scientific result be claimed?

1. role of distros:

- 2. liaison between the users and developers
- 3. provide feedback, report bugs to the dev
- 4. simplify installation/usage XP

- 1. high end servers. multiple mirrors across the globe
 - 2. firm packaging guidelines; go through a heavy-duty review process; proper testing of the software before releasing to the general user
- 3. many contributors hail from different backgrounds, and have a lot to learn
- 4. provide help to the users