1. A simplified diagram. Actually a lot more complex
2. General workflow of research-based work.
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. common tools used by people in science and 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

1. The dev may not provide instructions on how to use the software
2. 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